

# Minister of Natural Resources

Annual Report  
1976





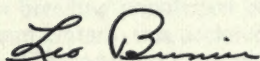


# Annual Report

of the Minister of Natural Resources  
of the Province of Ontario  
for the fiscal year ending March 31, 1976  
\$1.00

TO HER HONOUR  
The Lieutenant-Governor  
of the Province of Ontario

MAY IT PLEASE YOUR HONOUR  
The undersigned begs respectfully to present to  
your Honour the Annual Report of the Ministry  
of Natural Resources for the fiscal year begin-  
ning April 1, 1975, and ending March 31, 1976.



LEO BERNIER  
Minister



Ministry of  
Natural  
Resources



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# Foreword

This report is a summary of the Ministry's activities during the fiscal year which ended March 31, 1976. Additional detail is reported in *Statistics, 1976*, released concurrently, and in *Ontario Mineral Review, 1975*.

The goal of the Ministry of Natural Resources is defined as follows:

"To provide from Crown lands and waters, and to encourage on private lands and waters, a continuing combination of resource development, outdoor recreation and quality environment most consistent with the social and economic well-being of the people of Ontario."

## Highlights of the fiscal year ended March 31, 1976

- Visitors to Provincial Parks numbered 11,139,864, and 1,454,270 participated in the educational activities of the parks' interpretive program.
- A winter program, funded to \$500,000, was instituted to assist clubs and municipalities maintain 7,000 miles of snowmobile trails. These were additional to 1,500 miles of trails provided on public lands.
- Agreements with private landowners under The Woodlands Improvement Act increased by 753 to 4,404, bringing 218,663 acres under agreement.
- In the inventory of Ontario lakes and streams, 580 lakes (with an area of 550,000 acres) and 1,450 miles of stream were examined; 514 fishing maps have been prepared for public use and 40 more are under preparation.
- During the summer of 1975, Geological Branch had 43 survey parties in the field. On the Precambrian Shield, 24 field parties mapped 8,100 square miles. Other surveys included the assessment of fossil fuel potential.
- The program to establish a breeding population of wild Canada geese in southern Ontario was declared successful when the number of breeders or potential breeders was estimated at 10,000.
- Forest fires numbered 3,146, breaking a 39-year-old record, but the burned-over area was held to 41,651 acres, less than one-thirtieth of the 1974 total.
- An equal opportunity program for women employees was begun following the appointment of a women's co-ordinator.
- Campers in Provincial Parks numbered 1,621,887 and camper days 3,979,473, both new records.
- Management plans were completed on 54,765 square miles of Crown lands in 58 forest management units. On 105,251 square miles in 49 units, management plans were under preparation or consideration for approval.
- Fifteen-minute quadrant maps of southwestern Ontario, showing all gas and oil wells, were updated weekly and made available to the public. Well samples were stored and made available to geologists and mining engineers.
- About 6.4 million fish were stocked in Ontario waters.
- A total of 4,724 miles of forest access, logging access and Ministry service roads were maintained. The Ministry shared the cost of maintaining 472 miles of private forest roads.
- Indians in northern communities were assisted in lumbering, commercial fishing and trapping. The trapper education program was upgraded.
- Grants to Conservation Authorities totalled \$31,399,736.
- Four new Provincial Parks were opened, bringing the total to 121.
- Sports Fisheries Branch undertook the administration of Boating Restriction Regulations under the Canada Shipping Act.
- On Crown lands, 254,681 acres of forests received silvicultural treatment. Trees were marked for cutting on an additional 116,165 acres.
- A geochronology laboratory was established at the Royal Ontario Museum by an agreement between the Ministry and the Museum. It facilitates the investigation of radiometric ages.
- Agreement Forests, managed by the Minister for municipalities, Conservation Authorities and the Government of Canada, reached a total of 258,461 acres.
- The service of the Temiskaming Testing Laboratory was extended to include car sampling of low-grade concentrates.
- A system of wildlife management units was developed for northern Ontario.
- About 1,400 water access points were maintained on public lands for outdoor recreationists.
- A total of 1,578 licences was issued under The Pits and Quarries Control Act.
- An objective was reached when a northern goose camp, previously operated with the assistance of Ministry staff, was turned over completely to Indian management.
- Payments under the Mineral Exploration Assistance Program amounted to \$296,400.
- Experimental netting and trawling operations were conducted on Lake Superior, Lake Nipissing and several northwestern lakes to extend commercial fisheries.
- The value of mineral output in Ontario was tabulated by major economic areas, Natural Resources regions and mining centres.
- The Ontario Trails Council was appointed for a two year period.
- The Policy Co-Ordination Secretariat was established.



# Division of Forests

## Forest Research Branch

The Branch provides scientific and technical information to improve the management of forest resources in Ontario.

For artificial regeneration, the production of improved seed is a major consideration. The spruce research program includes selection of seed production areas and plus trees, determining the effect of gibberellic acids and fertilizers on flower and seed production, controlled crossing of native and exotic spruces to obtain hybrid vigor, evaluating the effect of seed zones (regions) in productivity systems, and determining the validity of moving spruce stock between regions. Early white spruce provenance tests were concluded.

White pine breeding and selection aim at better growth and resistance to blister rust. In hard pine research, greater variation is sought using irradiated pollen. A new program on the improvement of larch was initiated.

The production of fast growing species to satisfy the needs of industry and the farming community in south-eastern Ontario is an important and complex program. Fast growing hybrid poplars are promising as a short-rotation source of fibre for pulp. Poplar breeding and propagation have lead to extensive field testing in co-operative programs between research and management. Industry has shown considerable interest. Related studies deal with growth-site relationships, fertilization, nutrition and root development of hybrid poplar.

The production of vigorous planting stock and development of outplanting methods are primary goals of a number of research programs that include more efficient ways of raising seedlings (particularly black spruce) in nurseries and greenhouses, frost hardiness and dormancy, internal moisture conditions of stock, over-winter storage, stock handling and planting techniques. Some relatively sophisticated methods are being modified for field use.

In the spruce-fir-aspen forest on upland sites — an important forest type in northern Ontario — research concentrates on the ecology and productivity of spruce, growth responses in balsam fir, and cull in aspen.

Silvicultural research in hardwood forests in southern Ontario deals with regeneration of yellow birch and sugar maple, release of maple advance growth for quality wood production, planting of walnut and red oak with poplar as a nurse crop, and testing the suitability of tulip poplar and white ash. For the improvement of lowland forests the selection, vegetative propagation and field testing of Jackii poplar, silver maple and red ash continued.

The influence of site on tree growth is recognized. Studies include the use of fire weather index for estimating soil moisture content, nutrient content of forest humus, nutrient requirements of trees, and root development, particularly of red pine.

Growth prediction is important for management planning. Number and grade of pole-sized red pine emanating from plantations during the next two to three decades was estimated from yield studies. Variable density yield tables for hardwoods are being developed. Tests for stand normality for use on stand tables are promising.

The Branch publishes an annual research review. Forest Research Reports and Forest Research Notes are produced in addition to journal papers. Extension work includes courses in tree marking and soils, and contributions to timber certificate courses.

## Forest Management Branch

The objective of the Branch is to produce optimum and continuous industrial, social and environmental benefits from public forests, and to encourage and assist similar production on private lands in Ontario.

### Tree Seed Program

The inventory of forest tree seed in storage at the Ontario Tree Seed Plant, Angus, as of June 1, 1975, was 3,092,000,000 viable seed of 85 species, weighing 14,800 kgms and valued at \$680,000.

The year 1975 was a good crop year for many of the species used in the reforestation program.

1975 Seed Crop by Species	Hectolitres Collected
Red Pine . . . . .	431
Jack Pine . . . . .	9,858
White Spruce . . . . .	628
Black Spruce . . . . .	343
Black Walnut . . . . .	2,068
Other Species . . . . .	643
TOTAL:	13,971

### Seed Distribution

A total of 1,255,000,000 viable seeds was used to carry out 185 regeneration projects in the Province during 1975. This was an increase of 46 projects and 429,000,000 viable seeds over 1974. The seed was used in three main programs: nursery stock production, 336,000,000; tubelings, 14,000,000; and direct seeding, 905,000,000 viable seeds.

### Tree Improvement

Plus trees, Collected . . . . .	5,800 scions
Planted . . . . .	2,700 grafted trees
Seed Collection Areas. . . . .	4,900 acres
Seed Production Areas . . . . .	620 acres
Seed Orchards. . . . .	190 acres

This program is designed to improve seed quality and increase the quantity of available tree seed to meet the requirements of the production policy.

### Planting Stock

Distribution, conifers . . . . .	48,724,136
hardwoods . . . . .	2,220,597
Total. . . . .	50,944,733
Production Targets seeded. . . . .	83,183,000

The reduction in planting stock distribution and production is due to an increase in other methods to obtain regeneration on Crown lands (and meet production targets) such as direct seeding and modified harvest cut.

### Development

Field tests under the direction of mechanical research staff were carried out on the Ontario Mark III planter in the Northern Region and at the Maple Research Station.

Work was completed on converting a used cigarette machine to make ¾-inch soil-filled containers for growing



tree seedlings. Later in the season, the machine was modified to produce 600,000 7/16-inch containers for growing spruce germinants for tree nursery production.

Private Lands

The Woodlands Improvement Act	Number of Agreements	Acres
New agreements activated 1975-76 . . . . .	753	28,403
Agreements in effect to March 31, 1976 . . . . .	4,404	218,663
Number of trees planted: 10,707,850.		

These operations are carried out on private land under The Woodlands Improvement Act agreements. The acreage treated is an integral part of forest production targets, particularly in southern Ontario where there is no significant Crown land area.

Advisory Services

1. Number of public inquiries serviced . . . . .	54,018
2. Number of field inspections made . . . . .	6,061
3. Number of forest management programs prepared . . . . .	353
4. Total area for which management programs were prepared . . . . .	16, 105 acres
5. Trees purchased and planted by private landowners . . . . .	8,593,424
6. Timber marked for harvesting:	
Sawtimber . . . . .	1,500,026 cu.ft.
Pulpwood . . . . .	13,503 cords

7. Activities with youth groups . . . . .	260 groups
8. Public education activities and services . . . . .	1,275 items
9. Days of forestry instruction provided to schools, colleges, universities . . . . .	463 days

The above data are a measure of the forestry extension program offered to all landowners. A change in landowner management practices is desired to ensure the establishment and maintenance of private forests for the production of forest products and forest values.

Agreement Forests

Agreement Holders	Added 1975-6	Released 1975-6	Total Acreage
1 Government of Canada . . . . .			3,532.00
24 Conservation Authorities . . . . .	1,211.00	4.91	93,489.06
19 Counties . . . . .	1,101.00	307.61	143,586.36
10 Townships . . . . .			3,029.24
6 Regional Municipalities . . . . .	25.00	1.63	14,824.03
60 Totals . . . . .	2,337.00	314.15	258,460.69

The agencies reported above have forest management agreements with the Minister under the authority of The Forestry Act. The agency's forests are an integral part of forest production targets, of particular importance in districts with no significant Crown land areas.

Classification of Cut-Over Forest Land, 1975-6

Areas in Acres

Cutting Method	Regeneration Required	Satisfactory Natural Regeneration	Regeneration not Required	Total
Clear Cut	264,895	83,267	—	348,162
Selection Cut	—	40,295	—	40,295
Partial Cut	—	—	97,748	97,748
TOTAL	264,895	123,562	97,748	486,205

Regeneration and Tending of Forest Land, 1975-6

Areas in Acres

Treatment	Crown Land	Agreement Forests	W.I.A.	Sub-Total	Other Patent Lands	Total
REGENERATION						
Planting Nursery Stock	49,561	1,801	8,769	60,131	7,291	67,422
Container Stock	6,837	—	—	6,837	—	6,837
Seeding	58,095	—	—	58,095	—	58,095
Modified Harvest Cut	23,725	281	57	24,063	388	24,451
Scarification	11,862	—	—	11,862	—	11,862
Seed Trees	3,781	—	—	3,781	—	3,781
Total	153,861	2,082	8,826	164,769	7,679	172,448
TENDING						
Hand Cleaning	9,265	2,284	326	11,875	—	11,875
Herbicide Spraying	15,136	595	455	16,186	—	16,186
Thinning Improvement Cuts	32,964	5,539	9,867	48,370	698	49,068
Pruning	1,385	1,084	550	3,019	—	3,019
Fertilization, Drainage	404	1,178	503	2,085	—	2,085
Total	59,154	10,680	11,701	81,535	698	82,233
TOTAL AREA TREATED	213,015	12,762	20,527	246,304	8,377	254,681
For Seeding, Planting or Modified Harvest Cutting						
Site Preparation	96,642	1,005	2,262	99,909	—	99,909
Tree Marking	91,061	6,330	13,794	111,185	4,980	116,165



# Pest Control

The spruce budworm remained the most destructive forest pest in 1975. Infestation of balsam fir and white spruce occurred over a gross forested area of 33.2 million acres (13.3 million ha), an increase of 9.2 million acres (3.7 million ha) over 1974. The exceptionally warm and sunny weather that occurred throughout the Province during the latter part of May was a major factor contributing to the survival and development of the budworm.

Aerial spraying to control this pest was conducted on 34,000 acres. Two insecticides were used. Fenitrothion in water was applied in single (6,830 acres) or double (1,845 acres) applications at rates of two to four ounces of active material in 24 fluid ounces of spray mixture per acre. Dylox U.L.V. was used undiluted at the rate of 12 ounces of active material per acre (20,000 acres) and 24 ounces per acre (5,200 acres). In addition 650 acres were sprayed by aircraft and 50 acres by mistblower with the biological bacillus insecticide (Thuricide).

Other pest problems for which small scale control treatments were conducted were the white pine weevil and white grubs. The first large-scale operational control trial using virus from aircraft (308 acres) was carried out in Sand Banks Provincial Park with spectacular results. Some experiments to limit the spread of the root rot, *Formes annosus*, from infection foci in pine plantations were conducted employing the biological control agent, *Peniophora gigantea*.

# Timber Sales Branch

The major responsibility of the Branch is the orderly disposition of the Province's timber resource through the administration of major sections of The Crown Timber Act. This is accomplished by the review and approval of forest management plans, the allocation of the Province's Crown timber to the forest industry through various statutory methods, the licensing of forest industry mills, the measurement of the harvested volume of Crown timber, and the monitoring of factors affecting the viability of the Province's forest industry.

Forest management plans provide the broad framework within which forest operations are conducted. More detailed operating plans for shorter time period identify the Crown timber stands to be harvested, regenerated and tended, and the roads and other improvements required on Crown, company and Agreement Forest management units.

## Management Plans, March 31, 1976

Areas in Square Miles	Forest Management Units					
	Crown		Company		Agreement	
	No.	Area	No.	Area	No.	Area
Approved/Standard Plans	56	48,112	2	6,653	33	256
Plans Submitted for Approval	5	5,906	2	6,452	—	—
Plans being Prepared	15	21,801	27	71,102	27	144
Inventory required	3	5,136	—	—	—	—
Units not under Plans	9	24,292	—	—	—	—
Total	88	105,247	31	84,207	60	400

## Timber Allocation

Crown timber is allocated to the Province's forest industry in accordance with forest management principles and industrial requirements. Crown timber harvesting licences

provide the Province's forest industry with the legislative authority to harvest Crown timber on the basis of the annual allowable harvest.

Timber harvesting licences take one of several major forms and are specific as to geographic area, tree species, volumes, stumpage and other charges, and various control measures.

Forest industry mills are licensed to operate with respect to Crown and private timber supplies in a specific locality.

## Crown Timber Licences

Areas under Licence at March 31, 1976	Number	Square Miles
Under Section 2, Crown Timber Act . . .	26	228.9
Under Section 3, Crown Timber Act . . .	399	94,994.5
Under Section 5, Crown Timber Act . . .	15	76.9
Total. . . . .	440	95,300.3

## Mill Licences 1971 1972 1973 1974 1975

Lumber Saw Mills					
8-hour capacity					
Capacity over 50M fbm . . .	35	41	67	60	53
Capacity 10M to 50M fbm .	79	88	96	104	98
Capacity under 10M fbm . .	560	536	531	570	569
Miscellaneous . . . . .	91	83	49	40	45
Veneer Mills . . . . .	27	29	25	26	23
Pulp Mills. . . . .	24	23	23	24	23
Total. . . . .	816	800	791	824	811

## Pulp Chips, 1975

Ontario Production	Number of Mills	Bone Dry Tons
Shipments . . . . .		1,283,006
Unsold Inventory . . . . .		90,173
Total. . . . .	102	1,373,179

Consumption of Ontario Chips Jurisdictions	Number of Mills	Bone Dry Tons
Ontario . . . . .	19	1,089,241
Quebec . . . . .	6	133,925
Manitoba . . . . .	1	445
U.S.A. . . . .	5	59,395
Total . . . . .	31	1,283,006

## Volume and Value of Wood Cut from Agreement Forests, 1975-6

Products	Cubic Feet	Value
Sawlogs . . . . .	149,479.47	\$ 39,776.29
Poles and Posts . . . . .	94,809.60	31,252.44
Fuelwood . . . . .	115,722.25	21,312.00
Pulpwood . . . . .	1,135,351.50	56,468.27
Miscellaneous . . . . .	6,460.00	6,131.73
Total. . . . .	1,501,822.82	154,940.73

## Forest Industry Development

This Section is concerned with the growth and development of the components of the Province's forest industry by monitoring the demand for, and supply of, timber products and the pattern of trade in these commodities, and by analyzing resource taxation and pricing. The Section assists in industrial expansion and regional development through industrial liaison, policy development and economic analyses.



## Wood Measurement

The measurement of harvested timber, or scaling, determines the volume of timber removed from Crown land and Agreement Forests. It is the basis for the determination of public revenue and forest production statistics related to the forest industry. Only licensed scalers, approved by the

Ministry, may carry out this important function. Timber measurement practices are under constant review to ensure they keep abreast of the latest harvesting techniques. During 1975-6, the seventh edition of "The Manual of Scaling Instructions" was published to reflect new measurement methods such as weight scaling and grade scaling.

## Volume and Value of Wood Cut from Crown Lands, 1975-6

Tree Species	Cubic Feet	Bonus	Crown Dues	Stumpage Value
<b>SOFTWOODS</b>				
White Pine	\$ 15,776,787.00	\$ 619,983.54	\$ 900,711.72	\$ 1,520,695.26
Red Pine	7,158,688.19	245,800.56	407,115.09	652,915.65
Jack Pine	96,282,311.31	204,474.61	5,299,982.35	5,504,456.96
Pine, Mixed	621,040.92	478.65	25,302.42	25,781.07
Spruce	151,828,288.92	541,720.59	8,470,853.17	9,012,573.76
Hemlock	1,663,399.18	15,400.57	94,954.39	110,354.96
Balsam	9,640,667.65	31,676.56	537,658.16	569,334.72
Cedar	520,231.26	7,542.14	28,582.82	36,124.96
Tamarack	75,958.98	760.93	4,305.46	5,066.39
Softwoods, Mixed	66,552.45	28.77	1,418.67	1,447.44
Total Softwoods	283,633,925.86	1,667,866.92	15,770,884.25	17,438,751.17
<b>HARDWOODS</b>				
Maple	7,820,527.19	125,956.98	640,543.97	766,500.95
Yellow Birch	4,354,513.96	225,448.13	362,509.73	587,957.86
White Birch	2,172,478.21	26,718.70	28,396.50	55,155.20
Oak	264,956.01	15,010.56	16,484.24	31,494.80
Beech	348,225.97	12,085.05	28,128.34	40,213.39
Ash	38,336.84	1,160.70	2,873.89	4,034.59
Elm	56,534.67	1,463.21	6,888.60	8,351.81
Basswood	228,870.93	7,111.32	19,026.92	26,138.24
Butternut	9.91	0.53	0.53	1.06
Cherry	26,386.15	372.73	2,374.51	2,747.24
Poplar	24,267,230.73	81,518.88	299,119.46	380,638.34
Hardwoods, Mixed	3,855,349.22	33,526.13	49,497.12	83,023.25
Total Hardwoods	43,433,419.79	530,372.92	1,455,843.81	1,986,216.73
Grand Total	327,067,345.65	2,198,239.84	17,226,728.06	19,424,967.90

# Division of Mines

## Geological Branch

Geological Branch provides information on the geology and mineral resources of Ontario to encourage exploration and development of mineral wealth by the mining industry, and as a basis for land-use and transportation-route planning and the development of non-renewable resource utilization policy.

Geological, geophysical and geochemical surveys identify favourable locations for mineral and aggregate deposits and provide increased knowledge and understanding of the geological history of Ontario. Existing data on mineral deposits are being compiled, and new studies have been initiated. Educational programs and published reports and maps are available to the public.

The Branch administers the Mineral Exploration Assistance Program (MEAP) whereby the Government reimburses an individual or company one-third of the cost of an approved exploration expenditure (maximum \$100,000) in any of six designated areas.

### Precambrian Geology Section

During the summer of 1975, 24 field parties undertook interpretive mapping of rock formations of the Precambrian Shield. A total of 1,400 square miles was mapped at a scale of one inch to one-quarter mile for publication at one inch to one-half mile. Six reconnaissance and compilation projects covering 1,200 square miles were carried out for publication at one inch to one mile.

Operation Kenora-Ear Falls, a helicopter supported reconnaissance project, covered more than 5,500 square miles for publication at one inch to four miles. Four compilation sheets (one inch to four miles) were in preparation.

On the basis of field area location, the geologists of the Section are divided into North Archean, Central Archean, South Archean and Proterozoic mapping groups.

### Phanerozoic Geology Section

The Section is responsible for the survey and analysis of post-Precambrian soil and rock materials in Ontario. Major thrusts are the stratigraphic mapping of Paleozoic and



Quaternary age sediments and the inventory of mineral aggregates. An important role is to provide information to, and liaise with, municipalities for aggregate resource planning.

During the summer of 1975, there were five Quaternary geology mapping parties in southern Ontario; these were located at Walkerton, Markdale, Simcoe, Durham, and Goderich.

One party carried out investigations of the landslide-susceptible Champlain Sea Clay in eastern Ontario, and one glacial geologist was attached to a geochemical survey party at Jellicoe in northern Ontario.

One Paleozoic geology field party investigated the rocks of the Niagara Escarpment as well as the rocks of the Galt-Brantford-Simcoe area. Mineral aggregate surveys were carried out for several townships in southern Ontario.

### Geophysics/Geochemistry Section

Geophysical surveys carried out in 1975 included a gravity survey in the Uchi Lake-Birch Lake area. Combined geochemistry-Quaternary geology surveys were carried out in the Beardmore-Geraldton area. A geochemical-geological investigation of the relationships between massive sulphide deposits and their volcanic host rocks was conducted in the Confederation Lake area with the Mineral Deposits Section.

The Section was responsible for the planning and implementation of the provincial level of a reconnaissance airborne radiometric survey in the Ignace-Sioux Lookout area. This survey is part of the Federal-Provincial Uranium Reconnaissance Program to provide information for exploration and assessment of uranium potential.

Development of computer-based techniques for processing and interpretation of geoscience data was continued. A plotter-digitizer facility was obtained to further enhance data interpretation capability.

### Mineral Deposits Section

The Section studies deposits of both metallic and non-metallic minerals, their distribution, geology, reserves and potential. An important role is to provide reserve data and resource potential estimates for use in government planning, particularly for land use, parks and transportation corridors, and as background for studies by Mineral Resources Branch.

With Mineral Resources Branch, the Section drew up an Ontario Mineral Resource Classification scheme and co-operated in the National Uranium Resources Appraisal Program and a zinc resources inventory of Ontario. Studies included metal distribution maps for uranium-thorium, iron and nickel (published); gold, silver, base metals, and molybdenum (in preparation); a series of mineral potential maps; the final volume of Gold Deposits of Ontario; a peat study; and a revision of silica and marble deposits.

### Mineral Exploration Assistance Program

Government payments under MEAP for the fiscal year were \$296,400 with a total government expenditure in the past five years of \$1,698,461. A large area in eastern Ontario was added to the five other designated areas of Red Lake, Atikokan, Geraldton-Beardmore, Kirkland Lake and Cobalt-Gowganda. Open File Report 5209 covers MEAP to March 31, 1976.

### Geochronology Laboratory

Geological Branch, in conjunction with the Department of Mineralogy and Geology, Royal Ontario Museum, established a geochronology laboratory at the Museum. This facility will provide the absolute radiometric ages necessary for unravelling the geological history of Ontario's Precambrian Shield and its mineral deposits.

Geological Branch will conduct a long-term program of radiometric age investigations with emphasis on mineralized

areas such as Early Precambrian volcanic belts and on geological problems related to the formation of ore deposits.

### James Bay Lowlands Program

The program for preliminary assessment of fossil fuel potential was continued. Geophysics/Geochemistry Section planned and co-ordinated airborne and ground geophysical surveys over the Onakawana lignite deposit to research and design geophysical methods for lignite exploration.

Phanerozoic Geology and Mineral Deposits Sections carried out investigations of the Cretaceous sediments in the Lowlands. Several Open File Reports on this program have been released.

### Regional and Resident Geological Program

Regional and Resident Geologists' offices were maintained in the following centres: Kenora, Red Lake, Sioux Lookout, Thunder Bay, Sault Ste. Marie, Sudbury, Timmins, Kirkland Lake, Huntsville, Kemptville, Richmond Hill and London.

The principal function of regional and resident geologists is to provide consultative service to government, industry and public on the geology and mineral deposits of the Province. In carrying out this function, they conducted visits on a regular basis to operating mines and both active and inactive prospects.

They also undertook a variety of mapping projects and specific studies. An examination of gold associated with carbonate rocks in the Timmins area was initiated and slope stability studies were started on the geologically hazardous quick clays which underlie part of the Eastern Ontario Region. The latter study inaugurates a Regional Geologist's efforts on problems associated with geotechnical engineering.

### Geoservices Section

The Geoservices Section provides a support and service function to Ministry geoscientists, management and public. Five subsections are formed according to functional responsibilities.

*Scientific Review Office* is responsible for the scientific review, editing and publication of all geoscience reports and preliminary maps. The following were printed during the year:

Geoscience Reports, Industrial Mineral Reports	21
Open File Reports	58
Miscellaneous Papers, Miscellaneous Publications	10
Reprints	4
Coloured Maps (cartography by Division of Lands)	40
Preliminary Maps	96

In addition, 55 reports were in progress and under review and several hundred illustrations were produced by the drafting unit.

*Geoscience Data Centre* performs tasks related to the gathering, research, compilation and computer processing of geoscience data on mineral deposits of Ontario; indexes publications released by Geological Branch and reports submitted for assessment work credit; and within its means investigates and improves upon existing data handling systems.

During the year, 1,300 Branch publications, MEAP reports and assessment work reports were indexed for computerized storage in the Ontario Index to Geoscience Data. Several computer retrievals were made for Branch geologists and a Township and NTS Index to Ontario Geoscience Reports was released as an Open File Report.

On-line access facilities to commercially-based bibliographic files, such as GeoRef, are now provided by the Centre.

The Centre updated or compiled some 290 Mineral Deposits Records for uranium deposits. In co-operation with Mineral Deposits Section, work has been started on



the creation of two computer-based files, one containing data on all Ontario's iron deposits and the other including geological data on diamond drill holes located in the Elliott Lake area.

*Geoscience Information Office* conducts and organizes classes of instruction in geology and mineral exploration, answers geological inquiries from the public, and prepares or assists in the production of popular brochures and guidebooks on the geology of Ontario.

A number of mineral education courses including two field courses and several field trips, were conducted. During the summer, half-day geological talks were arranged for Junior Ranger camps.

During 1975-6 three brochures for the general public were released — Amethyst: Purple Gemstone of the North; Bancroft Area Minerals; and Toronto's Geological Past: An Introduction.

Two annual publications of popular interest are *Rocks and Minerals Information*, listing sources of geological and mining information of general interest, and *Ontario Mineral Review*, an annual summary of mining and Ministry activities.

*Assessment Files Research Office* maintains, for public use, a library containing all technical surveys filed for assessment credit. In addition, prospectuses, summary reports from the Ontario Securities Commission and technical data, filed in accordance with MEAP, are also filed.

*Technical Services Office* arranges for the requisitioning, maintenance and cataloguing of all field equipment, vehicles, furniture and scientific instruments for Geological Branch.

## Mineral Resources Branch

The prime objective of the Branch is to assure the orderly development and optimum use of provincial mineral resources in line with the Ministry's policy of broadening the base of mineral development and processing in Ontario. The most important function of the Branch is to provide the Minister of Natural Resources with in-depth researched information and mineral policy options, as well as to ensure equitable mining tax assessments. Major areas of responsibility for the Branch are as follows:

(a) Development and administration of mineral resource policies;

(b) Analysis of the effectiveness of present public policies in various jurisdictions in respect of mineral resource development;

(c) In-depth world-wide mineral commodity studies on each mineral element in provincial mineral reserves, with priorities set for nickel, copper, zinc, iron ore, precious metals, uranium and structural materials;

(d) Administration of The Mining Tax Act, The Petroleum Resources Act, The Pits and Quarries Control Act and certain parts of The Mining Act;

(e) In-depth analysis of the existing tax systems to develop a more effective mineral taxation policy;

(f) Economic studies of metal and mineral markets and factors affecting Ontario's mineral output;

(g) Federal-Provincial liaison on mineral resources problems;

(h) Determination of an inventory of the Province's mineral resources, commodity by commodity, and commercially viable ore reserves;

(i) Continuing analysis of the mineral reserves position against present and projected world supply and demand for minerals;

(j) In-depth studies of mining and exploration company decision-making processes;

(k) Preparation of plans to stimulate exploration for, and development of, mineral resources in Ontario; and

(l) Studies on economic behaviour of multi-national mineral resources companies.

## Metallic Minerals Section

The objectives of the Section are 1) to provide effective metallic mineral policy options for the Division of Mines based upon in-depth research on a commodity or tropical basis, 2) to monitor metal market trends as well as technological progress in the mineral sector and, 3) monitor policy developments in other jurisdictions with respect to their anticipated impact on Ontario metal mining and processing.

On a commodity basis, a study entitled "Towards a Zinc Policy for the Province of Ontario" was completed and published as a policy background paper in December, 1976. Work on the revision and updating of the 1974 policy background paper on iron ore continued and will be completed by fall, 1977. A similar study on nickel was initiated before the end of the year. Due to the size and complexity of the subject, completion is expected in 1978.

The second stage of the development of an economic model of the mineral industry of Ontario was completed, and a summary report was released for publication in the Annual Review issue of *The Northern Miner*. The study in its entirety is being readied for publication late in 1977. A study of the economic growth debate in its relevance for Ontario mining has been carried to the same stage.

\* Studies of different aspects of the problems of Ontario's declining gold mining industry were carried out to provide background material for responses to a wide variety of submissions from interested parties.

In the area of energy resources, the Section continued to evaluate developments concerning the Onakawana lignite deposits and also detailed one mining engineer to co-operate with Ministry of Energy personnel in monitoring Ontario's stake in Syncrude.

In conjunction with Geology Branch staff, the Section completed work on an inventory of the zinc reserves of the Province and commenced inventory studies of its nickel reserves. The uranium reserves inventory was updated.

Although this mineral inventory work develops a crucial part of the data base necessary for the development of mineral policy options, publication is not possible due to the confidential nature of the company data involved.

Liaison with organs of the Federal government, of the Provincial governments and of some foreign jurisdictions, as well as with mining company representatives, continued on matters pertaining to Ontario Mineral Policy and mineral industry matters of mutual concern.

There was also continuing involvement in the issues evolving in connection with the administration of The Mining Tax Act and The Ontario Mining Act.

## Industrial Minerals Section

The Section has two major functions:

1. Providing the input necessary to fulfill the role of the Branch in presenting industrial (non-metallic) mineral policy options for the Province; and

2. Administering The Pits and Quarries Control Act.

The policy function will be developed on a progressive basis to deal in turn with each industrial mineral and rock commodity by implementing the processes outlined as major areas of responsibility for the Branch.

The Section's function in administration of The Pits



and Quarries Control Act involves a dual role. On the one hand, consultation and guidance are provided to the Ministry's field offices which, through their pits and quarries inspectors, are responsible for implementing the requirements of the Act. On the other hand, the Section has been processing applications for pit and quarry licences forwarded from the field offices for the Minister's decision.

As of June, 1975, and December, 1976, respectively, the Ministry's Central and Southwestern Regions assumed the latter responsibility in keeping with Government's plans for decentralization of operations.

Three regional Mineral Aggregate Studies have been contracted out to consultants and completed. Those for the Central and Eastern Regions are published and available and the Southwestern study will be available early in 1977.

As of August 27, 1976, there were 278 geographic townships designated under the Act. Understandably, the majority of staff time has been expended in 1) liaison with inspectors, 2) processing the many applications, 3) explaining the Act and its purposes to applicants in personal and telephone interviews, and 4) participating in various relevant meetings.

A total of 1,578 Pits and Quarries Control Act licences have been issued in the designated areas.

## Mining Tax Assessment Section

The Section experienced a major reorganization during 1975-6 to cope with the increased complexity of the Act, following the 1975 and 1976 amendments to the statute.

The Section provides draft mining tax assessments and financial data for the Mine Assessor to assist him in the administration of The Mining Tax Act and determination of the tax due.

At the end of last year, the Section staff consisted of one trained assistant mine assessor and an analyst. This staff has been augmented in 1976 by a section supervisor, two assistant mine assessors under training, and an assistant assessor under contract.

Mining tax returns were received for taxation year 1975 indicating estimated liability under the Act for 1975 operations of more than \$50,000,000.

## Petroleum Resources Section

The Section is responsible for all the activities associated with the oil and gas exploration, drilling and production industry in Ontario. These functions include the conservation and development of Ontario's petroleum resources in conjunction with acceptable environmental and safety standards.

Geological and engineering data are collected on all wells drilled in the Province and consolidated in the form of publications and maps which are made available to the public to encourage the equitable development of Ontario's petroleum resources.

The Section's staff includes qualified geologists, reservoir engineers and resource officers. As an integrated regulatory and scientific agency, it is able to advise Government on all problems arising from legislation and the wide variety of technical and scientific problems related to oil and gas exploration and development in Ontario and other areas of Canada.

The Section, operating under the authority of The Petroleum Resources Act and Regulations made thereunder, requires the submission of all information collected in the drilling and production of wells. This information is submitted in the form of core and drill cutting samples,

engineering and geological completion reports, fluid analyses, monthly and annual production reports, and a variety of reports required of the various licences issued.

All data is validated by the appropriate regional resource officer and interpreted and transcribed by geologists and engineers into readily accessible forms by way of hard copy documents, microfilm, and computer output for both internal and public use.

Through its drafting unit, the Section compiles and constructs 15-minute quadrant maps for southwestern Ontario showing all oil and gas wells and regulation spacing areas. The maps are updated weekly and made available to the public.

The geological well samples are washed, bottled and stored in the repository facilities located in London. Here they are made available to geologists and engineers from industry and universities for research studies.

Under the authority of The Mining Act and Ontario Regulation 546/71, The Section regulates the disposition of mineral rights within Lake Erie. To the end of 1975 the Section had issued 2,523,609 acres under Licence of Occupation and 277,286 acres under production leases to a total of seven operators.

During 1975 a total of 162 wells were drilled in Ontario, including 66 wells in Lake Erie. Off-shore operations are closely scrutinized by the resource officer staff normally operating on a 24-hour basis and staying aboard the drilling vessel during critical phases of the operation.

Since 1858 more than 100,000 oil and gas wells have been drilled in Ontario, and many have never been properly plugged. As a result the Section, through Government funding, administers the plugging of hazardous wells on a priority basis, and in turn works closely with T.E.I.G.A. and other agencies in this regard.

## Mineral Economics Section

The Section has been established with elements of the former Commodity Analysis Section. Its responsibilities are as follows:

1. Economic and statistical research as an input to the development of mineral policy options;
2. Development and maintenance of an economic and mineral commodity data base;
3. Annual survey and preparation of annual reports on
  - (a) Mineral Industry Statistics, and
  - (b) Mining Accident Statistics and Employment;
4. Collection and analysis of national and international data on all metals and minerals commodities, prices, markets, consumption trends tariffs, duties and export-import restrictions;
5. Studies on economic impact of mineral policies in other provinces;
6. Consulting services in field of mineral statistics to other branches of the Ministry, other Ministries and the interested public, and
7. Administration of Part X - Refinery Provisions of The Mining Act.

In 1975-6, preparatory work was undertaken on the publication of the report on Ontario's Mineral Industry Statistics for 1971-1973. The information and the statistical data previously published in these reports have been made available to the interested public on an open file. By the end of the year the open data file on mineral industry operations was completed for the years 1973 and 1974 and the statistical data on mineral production of Ontario were tabulated for 1972 and 1973.

The Section is responsible for preparation of an annual bulletin on mining accident statistics and employment.

In addition to the statistical breakdown of data by major economic areas, Northwestern, Northeastern and Southern Ontario, as well as by major mining centres, the Section also tabulated in 1975 the values of mineral output



for each of the newly established Natural Resource regions.

The Section provided services in the field of mineral statistics to the staff of the Ministry of Natural Resources, other government agencies and the interested public.

Economic and statistical research on mineral resources was reoriented from pure research and assembly to applied research, targeted to output requirements.

## Mineral Research Branch

The function of the Branch is to provide scientific support and technical services for Division of Mines programs. The services include direct assistance to the private sector as well as in-house activities.

The Toronto and Cobalt laboratories avoid competition with private laboratories. Fees are charged for outside work. The coupon system for free work to prospectors came under scrutiny during the year.

### Toronto Laboratory

#### Analytical Section

This Section is equipped with sophisticated equipment for the inorganic analysis of geological materials. Automatic x-ray spectrophotographic equipment was installed and put into operation during the year. This upgrading of facilities was in response to the increasing importance of petrochemistry in geological mapping.

Analytical work is a major component of the Division geochemical program and therefore accounts for a large proportion of the activity of the Section. Development work and methods research is necessary to meet program needs. This centered primarily on the determination of tellurium and tin by hydride generation.

Participation in standard reference material analysis was continued in co-operation with CANMET, Ministry of the Environment, and the Canada Centre for Inland Waters.

#### Mineral Sciences Section

A similar role is played by this Section with respect to mineralogy, petrology and physical testing. Examinations, consultations, and projects for the public were significant. The Section contributes in various ways to the rock analysis program, mainly through the maintenance of the rock and thin section library of the Division and the development and implementation of a computerized norm program for all analyzed samples. This is useful to geologists for the interpretation of data.

Highlights for the year were a study of Ontario peat, and special studies of alkaline rocks, carbonatites and marbles.

In support of the respiratory dust program of Mines Engineering Branch to monitor quartz dust by means of personal gravimetric samplers, an automated and computerized facility was set up to analyze dust collected by the Government and by the mines. Equipment was on hand and the program under way by the end of the period.

### Cobalt Laboratory

#### Temiskaming Testing Laboratory

The primary functions of the Laboratory are the bulk sampling of silver-cobalt ores and concentrates and the determination of silver, cobalt, nickel and copper so that the market value of mine shipments can be established.

While silver ores are given priority, the mill is available for the processing of other rocks, ores, and concentrates.

During the year, services to industry were expanded by undertaking to car sample low-grade concentrated in addition to the usual machine sampling of high-grade. In the area the new C.S. & R. treatment plant came on stream but strikes and other difficulties resulted in low production from area mines and low throughput at T.T.L.

## Mines Engineering Branch

The function of the Branch is primarily the administration of Part IX of The Mining Act and other codes and regulations dealing with the health and safety of workers in the mining industry.

During the past year, 30 engineers on field staff examined all operations in 107 mines and 1,700 pits. They investigated accidents, fires, unusual occurrences and numerous union complaints. Their routine inspections included the examination of engineering design in underground and surface plants.

The work force of 48,636 suffered 15 accidental deaths in 1975, giving a rate of 0.18 deaths per million work hours. The compensable accident frequency rose slightly to 54 per million work hours.

The Ontario Government Cable Testing Laboratory, located in the basement of the Whitney Block, completed 1,013 tests in 1975. All wire rope used in hoisting installations is required by statute to be tested before use and at intervals during service. Component materials are tested for strength and each cable is given a breaking test up to 600,000 pounds in tension.

Three research programs were in progress during the year.

In partnership with the Ontario Mining Association, the Branch continued development of an electronic device to locate broken wires in hoisting ropes. The device is now available.

At the Haileybury School of Mines, the Branch investigated the parameters involved in the operation of safety devices on mine shaft conveyances as well as the safety of deceleration rates where personnel are involved.

The Branch co-operated with the mining industry in developing braking and steering systems for vehicles and the use of fire suppression systems on rubber-tired, diesel-driven underground vehicles.

Seven fully equipped mine rescue stations and 17 sub-stations, complete with oxygen-breathing apparatus and supplies for emergency use, are maintained in Ontario.

Mine rescue training includes basic and advanced courses and regular training of more than 1,100 mine employees and supervisors. They are trained in all phases of mine rescue work one full day every two months.

A new Ventilation Section was established in May, 1975, under a chief engineer. It was located in Sudbury and transferred to Northeastern Region for administrative purposes.



# Division of Fish and Wildlife

## Sport Fisheries Branch

The objective of the Branch is to maintain and enhance the fish populations of Ontario as a stable base upon which to provide continuing recreational and economic benefits to the people of Ontario.

During recent decades, some of our waters have lost production potential and some fish populations have lost stability. The general stresses which act on fish populations include excessive exploitation, excessive degradation of water quality by nutrients and/or contaminants, and the side effects of newly introduced or invading species such as smelt and sea lampreys.

Recovery of the former fish production potential of Ontario waters requires a more intensive degree of fisheries management effort throughout the Province. This includes continuing international participation in the program of the Great Lakes Fishery Commission and an increased fisheries role in water-quality management programs co-ordinated by the International Joint Commission.

A joint federal-provincial team concluded over two years of work by recommending a series of strategies to achieve effective management of Ontario fisheries. These strategies will be discussed with our field staff and advisory groups before final recommendations are made for policies and programs.

## Fish Culture

Approximately 6.4 million fish and nine million eggs were stocked in Ontario during 1975. Of these, 24 per cent of the fish and eight per cent of the eggs were released into the Great Lakes and their tributaries. The balance was stocked in numerous inland waters.

Roughly 72 per cent of the fish stocked were salmonids – brook trout (24%), lake trout (20%), rainbow trout (16%), splake (9%), and coho (3%). The remaining 28 per cent were comprised of maskinonge (18%), yellow pickerel (5%), largemouth bass (3%), and smallmouth bass (2%).

Development of the fish culture data base is continuing. When fully operational, the system will facilitate the optimization of various aspects of the fish culture program.

Plans for the construction of the proposed new Lennox fish hatchery in southeastern Ontario and for the reconstruction of the Dorion hatchery main station in north-western Ontario were deferred because of Provincial monetary constraints. However, construction of the Dorion Hatchery sub-station was initiated and this facility is expected to be completed during the next fiscal year.

A Ministry agreement with the University of Guelph permitted the continuation of disease diagnostic services and fish nutrition studies. Improved diet formulations were developed and tested with favorable results.

## Population Dynamics

An integral responsibility of the Population Dynamics Section is to provide advice and consulting services to field staff involved in fisheries projects and particularly those

pertaining to salmonid communities. Participation in the Lake Huron and Lake Superior management committees is also an important function of the Section.

Work on the development of the harvest component of the Ontario Fisheries Information System continued.

The co-ordination role was continued for Ontario contributors to an International Percid Symposium (PERCIS) to be held in Ontario in the fall of 1976. Co-authorship of a paper for PERCIS on percid yields in northern Ontario lakes was undertaken.

The geographical atlas of lake trout waters was under revision preparatory to entry on cassette tape in late 1976. A factor analysis to determine important parameters for the classification of lake trout lakes was completed. The initial model showed gaps in information but also promise for future development.

A co-operative project with Fish and Wildlife Research Branch resulted in completion of a manuscript on the distribution and characteristics of lake trout waters in Ontario. This paper should be available in late 1976.

## Fish Habitat (Environmental) Dynamics

Ontario waters experience seasonal changes which are normal for them and the associated aquatic life. These changes are dynamic. On the other hand, modern society's activities cause additional changes to fish habitat, many of which are detrimental and reduce the ability of the habitat to produce fish. Considerable effort is needed to avoid or minimize detrimental changes and recoup habitat of low quality.

Studies continue with the Ministry of Transportation and Communications on the impact of the Hanlon Expressway (Hwy. 6) on a brook trout stream.

The co-operative study at Nanticoke is a special arrangement between Ontario Hydro, Stelco, Texaco and the Ministries of the Environment and Natural Resources. This study, to judge the impact of industrialization on that part of Lake Erie adjacent to Nanticoke, will soon be entering its sixth year.

The pilot study continued on Wilmot Creek to reclaim degraded fish habitat. Bank stabilization, fencing, and other in-stream works have been engineered to improve the ability of this former Atlantic salmon stream to produce trout. The results of the reclamation project will be applied to other streams in Ontario.

The booklet, "Better Streams for More Trout", was published this year.

In-stream dams continue to limit the production of natural salmonid populations. Fishways on the Saugeen and Ganaraska Rivers passed more than 3,500 rainbow trout and numerous brown trout, a significant increase over previous years, particularly on the Ganaraska.

Wherever possible, natural reproduction will be encouraged and assisted instead of using hatchery-reared fish. In this regard, work is under way to build a fishway on the Lucknow River at Port Albert.

Some dams have been washed away by floods and new habitat for spawning trout and salmonids has resulted.

We are considering the benefits of trucking mature fish above barriers on streams where fishways are not practical.

In the continuing Inventory Program for lakes and streams, 580 lakes (550,000 acres) and 1,450 miles of



stream were examined in 1975; 514 fishing maps have been prepared for public use and another 40 are in preparation.

Some populations of fish in certain waters of Ontario are contaminated with mercury and PCBs. We are co-operating with the Ministry of the Environment to prepare and implement the first year of a discovery program to ascertain the existing and relative importance of the environmental contaminant problem in Ontario aquatic environments and fish.

## Planning

Planning Section provides fisheries input for Ministry strategic land use plans, municipal plans, lakeshore development studies, and other planning activities within and outside the Ministry of Natural Resources. This work is essential to ensure that fisheries concerns receive adequate consideration in the planning process.

The "Trout and Salmon Migratory Routes Map" for northern Ontario was produced and is now available to the public.

Work is continuing on developing refined methods for calculating potential fish yields from lakes — information which is essential in managing our lakes.

An angler survey was conducted by means of a questionnaire mailed to a selected representative sample of 1975 non-resident angling licence holders and a random sample of Ontario households. An estimated 2,500 non-resident anglers and 6,000 Ontario residents were contacted.

The questionnaires solicited information on the amount and location of sport fishing in Ontario, user characteristics, angler preferences, expenditures related to sport fishing, and limited harvest information. Results of the survey are now being analyzed and will be published.

Sport Fisheries Branch has been designated as the provincial liaison agency in dealing with the federal government for small craft harbour development. To facilitate this work, an Inter-Ministerial Committee on Great Lakes Access has been formed.

Planning Section this year was given the responsibility of administering the Boating Restriction Regulations, under the Canada Shipping Act, for the Province. This is a federal responsibility delegated to the Province in 1972.

## Fisheries Services

Sales of non-resident angling licences remained fairly constant and exhibited minor fluctuations only. Seasonal licence sales decreased by 3.1 per cent while sales of three-day licences increased 2.8 per cent. Organized camp licences decreased slightly from 5,969 to 5,810.

The Canadian resident licence continued to be popular and increased from 21,807 to 22,637. The non-resident smelt licence, which includes bow-and-arrow fishing for carp, also increased in popularity and sales rose from 7,337 in 1974 to 8,735 in 1975.

Development of the Ontario Fisheries Information System continued this year with the initiation of three new data bases. The system was developed to integrate many types of data from different sources into one data base. It is intended for use when a particular fishery is being studied or assessed in detail over a considerable period of time.

The Lake Inventory data base was designed for the storage and retrieval of lake survey data collected from inland lakes.

The Commercial Fish data base, consisting of licence, harvest and capital investment information for fishermen holding commercial fishing licences, was also introduced.

The Hatchery Production and Costing data base continued in the development phase and the Creel Survey data base moved into the production phase.

## Wildlife Branch

The Branch objective is to manage, enhance and interpret wildlife populations and habitats to provide optimum wildlife-based recreation opportunities for the residents of Ontario and a continuous contribution to tourism and its related industries. Much effort is directed to the maintenance and improvement of wildlife habitat as it is habitat which determines the potential in wildlife numbers.

### Big Game Management

The moose population remains relatively stable. The rate of decline of the moose herd in accessible areas appears to be slowing. Moose populations in areas not easily accessible to hunters appear to be holding steady. Working with local populations of animals is important in implementing a sound provincial moose management program.

A Moose Council has been established to co-ordinate the program. It is comprised of the provincial moose biologist (chairman), provincial habitat ecologist, moose research biologist, the regional moose biologists from each of the four northern regions, and the regional wildlife biologist from Algonquin Region. The Council meets on a regular basis.

The new moose management program is described by seven management items as follows: (1) wildlife management unit data-book; (2) moose population inventory; (3) moose habitat inventory; (4) moose harvest assessment; (5) moose habitat management; (6) moose co-operative research project; and (7) provincial moose management demonstration area. Standards and guidelines for each management item are being developed by the Moose Council.

A system of wildlife Management Units has been developed for northern Ontario. Unit boundaries are described by lakes, rivers, roads and other features which make them easy to recognize on the ground. The Units will serve as a basis for formulating moose hunting regulations and assessing moose populations, habitat and the annual harvest.

The number of deer in the forested areas of the northwest fluctuates with winter condition, and in the forested areas south of the French and Mattawa Rivers it declines with decreasing habitat quality. In the agricultural south, the number of deer is holding or increasing. Habitat management is required for an abundance of deer. It is concentrated on increasing the winter food supply by cutting hardwood near conifer cover.

Black bear numbers, though difficult to assess, are believed to be holding constant. Nuisance bear are trapped and released elsewhere whenever possible, or destroyed if necessary. Hunters take 6,000 to 9,000 bears per year, and the number of bear hunters is still increasing.

Timber wolf and coyote populations remained relatively stable during the past year. Occurrences of predation on domestic stock, by coyotes primarily, were reported to be slightly higher than in 1974.

During 1975, the predator control program resulted in the removal of 178 wolves and coyotes and 15 black bears from areas where producers were losing livestock to these predators.

### Waterfowl Management

A program to establish a wild breeding population of Canada geese in southern Ontario, under way since 1968, has been entirely successful, and it is estimated that 10,000 of these birds now occur in that part of the province as breeders or potential breeders. Snow goose breeding success in the Northwest Territories was very poor in 1976 due to persistent snow cover during the nesting season. Breeding success of ducks was generally good and fall populations of these birds in Ontario is about average.



### Upland Game Management

Ruffed grouse appear to be maintaining a slow increase in numbers. Hungarian partridge numbers in eastern Ontario have remained stable or perhaps increased slightly. European hare also appear to have increased in numbers. Most other small game species, with the possible exceptions of squirrels and raccoons in certain localities, appear to be maintaining relatively stable populations.

### Non-Game Management

This program encompasses endangered and threatened species, urban wildlife, non-game wildlife, and wildlife interpretation outside of provincial parks.

Efforts with endangered species over the past year were primarily devoted to the documentation of evidence on the population status of certain species.

Several field programs, undertaken during the year, included studies on the blue racer snake. The white pelican studies continued in the Lake of the Woods.

A policy paper on endangered and threatened species was under development.

Wildlife Branch staff participated in the planning of the central waterfront area of the City of Toronto. This area contains some of the finest wildlife resources in the region.

A symposium was co-sponsored with the University of Guelph on Wildlife in Urban Canada. Wildlife Branch staff played a leading role in the development of the symposium.

Wildlife interpretation weekends were held at Long Point, Luther Marsh, and Hawk Cliff near St. Thomas. These programs have proven to be highly popular with the public.

### Wildlife Extension and Provincial Wildlife Areas

Forty areas are located throughout southern Ontario to provide wildlife-based recreation on private and public land. Habitat is managed to produce wildlife for viewing, hunting and maintenance of wildlife populations. Interpretive displays and trails are provided in many of the areas.

### Field Services

Conservation Officers of this Ministry are responsible for the enforcement of laws and regulations pertaining to fish and wildlife. The laws include The Game and Fish Act, The Endangered Species Act, The Fisheries Act, and The Migratory Birds Convention Act. Convictions for violations totalled 6,988 during the year.

### Planning

Many kinds of plans, including recreational, forestry, mining, housing, and municipal development plans, have been reviewed to ensure that wildlife interests are an integral part of planning considerations.

Environmental impact assessments from many sectors are increasing in number and have been carefully scrutinized with regard to wildlife interests.

Projects for 1976 consisted of development of a proposed master planning process for wildlife management areas, assembly of a bibliography of effects of development on wetlands, and determination of effects of development on wildlife resources in southern Ontario.

### Wildlife Surveys and Records

This office, formerly called the Central Licence Bureau, files hunting and non-resident angling licences. Statistics on participation in hunting, including participation rates, hunter success and harvest, and socio-economic characteristics of participants, are obtained through mailed questionnaires. This information supplements data obtained in the field and forms the basis for wildlife management and recreation planning.

## Commercial Fish and Fur Branch

The objective of the Branch is to manage fish, fur, wild rice and similar resources for commercial purposes.

### The Freshwater Fish Industry

Landings of most species remained comparable to previous years. However, yellow perch landings in Lake Erie declined, 25 per cent from 1974 as a result of reduced resource supply, and sales for animal food declined to near normal levels at 2.4 million pounds. In all, landings declined to 45.5 million pounds from 53.2 in 1974 while strengthening prices raised ex-vessel value to \$11.1 million from \$9.7 million in 1974. Bait-fish landings were fairly constant from 1974. Employment in both fisheries was about 5,500 persons. Some major activities during the year were as follows.

The Freight Equalization Assistance Program continued to assist fishermen in the remote fisheries in meeting high freight costs, and stimulated the harvest of unused species in the more accessible areas of northwestern Ontario.

Pair-trawling and pair-seining experiments were continued in Lake Nipissing to further refine techniques for selectively harvesting ciscoe and other under-used species in this lake.

Exploratory gill-netting was conducted in eastern Lake Superior to extend commercial chub fisheries in the area.

Experiments to develop effective impounding gear and techniques for use in confined waters were conducted in eastern Lake Superior and several lakes in northwestern Ontario.

Further assistance was provided to develop domestic markets for smoked and filleted mullet.

Extension activities to up-grade the bait-fish industry were continued in several parts of the Province. Refrigerated holding and handling equipment was demonstrated in the North Central Region.

The eel-ladder, installed at the Robert H. Saunders Generating Station in 1974, was operated successfully again in 1975. Nearly a million eels were assisted over the dam into Lake Ontario.

### The Wild Fur Industry

During the 1974-5 trapping season, the harvest of beaver by Ontario trappers declined to 156,105 pelts and the average pelt price fell to \$17.96. Adverse climatic conditions, affecting bush travel, were thought responsible for the decline, together with drought conditions in sections of northern Ontario.

An all-time record of 47,560 raccoons was harvested, primarily in southern Ontario.

The harvest of all other important fur-bearers was lower than during the previous year. The harvest of lynx continued to decline as predicted, due to the cyclic nature of the species.

The trapper education programs continued to be upgraded across the Province, and the response from trappers was again very favorable. Efficiency, humane trapping and good management practices continued to be stressed. In many workshops, trappers participated in the skinning and trap-setting demonstrations under the supervision of a demonstrator.

Ontario submitted two traps to the Federal Provincial Committee for Humane Trapping and also provided staff and financial support to the Committee.



PELTS	*HARVESTED		EXPORTED OR TANNED	
	Number	Av. Value	Number	Total Value
Beaver .....	156,105	\$ 17.96	159,984	\$2,873,312.64
Bobcat.....	25	50.87	29	1,475.23
Fisher .....	2,790	60.25	2,820	169,905.00
Arctic Fox ...	127	30.50	152	4,636.00
Colored Fox.	11,809	31.41	14,183	445,488.00
Lynx .....	1,918	127.17	1,954	248,490.18
Marten .....	18,006	7.92	18,463	146,226.96
Mink .....	17,194	8.46	17,512	148,151.52
Muskrat .....	487,238	3.16	479,671	1,515,760.36
Otter .....	7,507	46.81	7,757	363,105.17
Raccoon .....	47,560	12.14	71,172	864,028.08
Skunk .....	171	1.77	212	375.24
Wolverine .....	1	93.11	3	279.33
Squirrel .....	6,076	0.42	.....	.....
Weasel .....	4,689	0.49	.....	.....
Timber Wolf.	741	28.16	.....	.....
Coyote .....	1,319	16.70	.....	.....
Black Bear ....	288	33.46	.....	.....
Polar Bear ....	15	276.52	.....	.....
Totals .....	763,579	.....	773,912	6,781,233.74
*Total value: \$6,410,166.				

## Resource Development (Native People)

Under a Federal-Provincial Resource Development Agreement, which commenced in 1962, a number of programs were instituted to assist native people in various fields relating to renewable natural resourced. The following projects were carried out during the past fiscal year.

**Fur.** Aerial surveys of trapline areas assisted in locating trappers and their families on vacant traplines in highly productive areas in the Northern and North Central Regions. Trapper development programs which promoted the care and handling of pelts, as well as aspects of humane trapping techniques and sound management practices, were conducted in a number of Indian communities.

**Commercial Fish.** Nets and equipment were provided to various Indian bands in the Sioux Lookout and Geraldton areas. The unusually long fire season reduced fisheries production as a large number of fishermen were involved in fire suppression activities.

**Tourism.** The Indian bands were assisted in the operation of six goose camps on the coasts of Hudson and James Bays. The objective of this program is to assist native people to become self-sufficient in the management of these camps. This became a reality when the Tidewater Goose Camp was turned over the James Rickard of Mosse Factory.

**Hide Collection.** Moose and deer hides were collected throughout the Province and distributed at cost to various Indian communities where they are used in the manufacture of clothing an; handicrafts. Increased advertising led to a 70 per cent increase in the number of hides collected. It was anticipated that hunters would turn in about 10,000 hides in the 1976 season.

**Timber.** Technical advice was provided on logging, lumbering and reforestation projects. Assistance was given to Indian bands in the management of reserve forests and plantation improvements.

**Planning.** Indians attended meetings and took an active part in planning various resource-related projects. Indian representatives on the Resource Development Committee assist in determining the programs considered most beneficial to their needs.

## Fish and Wildlife Research Branch

The objective of the Branch is to undertake or arrange investigative research which will provide the understanding of basic principles related to fish and wildlife resources needed for their optimum management.

In pursuit of this objective, the Branch not only carries out relevant high-quality research and publishes its results in open scientific literature but makes its specialized expertise available to all levels of the Ministry to assist policy formulation, program design and the analysis and evaluation of results.

Much of our fisheries research is aimed at improved prediction of the impact of man's growing use of our waters and their fish communities. Such predictive capability is essential if wise choices are to be made between alternative management options.

This past year the Branch contributed significantly to the Great Lakes Fishery Commission's analyses which led to the liberalization of walleye quotas and to new yellow perch mesh-size regulations on Lake Erie. Both measures should lead to more stable and productive fisheries.

In another area we have been especially active in examining the effects of community development on the fisheries of our lakes to obtain precise information about the angling pressures generated by various degrees of development. This work contributes directly and importantly to a major, inter-disciplinary study of the whole problem of controlling shoreline development which has been co-operatively mounted by this Ministry and those of Environment and Housing.

Research on the physiology and genetics of reproduction, growth, longevity and survival of fish species of importance to Ontario fisheries is conducted under laboratory and field conditions.

During the past year, emphasis was placed on development of a new strain of trout between the highly selected fifth-generation splake and lake trout. Field tests on this strain have shown evidence of improved survival and longevity without loss of the rapid-growth characteristics of the highly selected splake.

In collecting the necessary data to pursue various studies, our fisheries scientists obtain much information of immediate use to management staff in areas where they work and have continued to serve as resource persons on local management committees. They also serve as technical representatives of the Ministry on inter-ministerial and federal-provincial committees as well as those of the International Joint Commission for Boundary Waters and the Great Lakes Fishery Commission.

Wildlife research in Ontario seeks to fill our knowledge gaps by investigation of behaviour, physiology, reproduction, pathology, population dynamics, and interactions between wildlife and habitat for selected species.

Progress continued toward optimization of a baiting strategy capable of delivering an oral rabies vaccine to the major wild carnivore vectors of the disease. This program is far in advance of comparable efforts around the world.

Black bear studies continued to provide important insight into fluctuations in human-bear problems. Studies continued on a bear parasite which has caused concern among hunters.

Pathological research included the analysis of material collected by Dr. Audrey Fyvie before her death, while laying the groundwork for experimental studies of the influence of diseases on population dynamics.

Continued development of a radio-tracking system bore valuable fruit, but full utilization of this tool is hampered by lack of the automated receiving equipment available through modern technology.



# Division of Parks

## Park Management Branch

The Branch is responsible for the development and operation of provincial parks and other recreation areas, and for their structural and facility design, concessions, interpretive facilities, and management control, and for the information of the public.

The number of campers using Ontario Provincial Parks increased in 1975 to 1,621,887, a new record, while total visitation increased slightly to 11,139,864 from 11,031,651 in 1974.

In southern Ontario, many families had to be turned away on busy weekends despite the addition of new campsites to the system. July-August percentage occupancy increased to 66 for the 20,332 campsites available, up from 62 the year before.

The number of parks in operation increased from 117 to 121 with the opening of four new parks as follows:

Bronte Creek, a 1,700-acre day-use recreational park, north of the Queen Elizabeth Way and midway between Toronto and Hamilton;

Quimet Canyon, a 1,920-acre nature reserve park 35 miles east of Thunder Bay and five miles north of Highway 17;

Cavern Lake, a 467-acre nature reserve park, 30 miles east of Thunder Bay; and

Silent Lake, a 1,860-acre natural environment park with 150 campsites 15 miles south of Bancroft on Highway 28.

Many existing park facilities were upgraded with improvements to water, sewage and electrical systems.

### Visitor Services — Interpretive Program

During the year, more than 1.4 million park visitors attended exhibits, conducted trips, self guiding trails, lectures, and organized group recreation activities to learn more about Ontario and its parks, environment, resource management and history.

A Waterfowl Viewing weekend was held at Long Point Provincial Park in co-operation with naturalist organizations, and over 6,000 visitors attended.

The number of parks offering interpretation programs continued to expand, and several new audio-visual programs were produced.

### Winter Parks

During the winter of 1975-6, four parks were operated on a winter basis: Arrowhead, near Huntsville; Sibbald Point, on Lake Simcoe; Pinery, on Lake Huron; and Rondeau, on Lake Erie. Winter facilities included snow-plowed roads and campsites, heated washrooms with hot water, central drinking water, fuelwood supply, garbage disposal, and electrical outlets. Regular fees were charged.

Ski-tows were operated at Pinery and Remi Lake Provincial Parks. Many other parks were used informally for activities such as snowshoeing, cross-country skiing and tobogganning.

### Snowmobile Trails

Snowmobiling was permitted in provincial parks on approximately 200 miles of marked trails and 700 miles of park roads during the winter of 1975-6. More than 600 miles of cross-country snowmobile trails were operated on public lands in the province.

A special one-season winter trail maintenance program, funded to \$500,000, was instituted to assist snowmobile clubs, cross-country ski clubs, municipalities and conservation authorities to improve the grooming of 7,000 miles of trail across the Province.

### Access Points

During the year, close to 1,400 access points with parking areas and boat launch ramps were maintained to provide boaters with access to lakes and rivers.

### Canoe Routes

In 1975, nearly 100,000 persons entered Algonquin and Quetico Provincial Parks for interior canoe camping.

A booklet, Northern Ontario Canoe Routes, summarizes 125 routes that represent 11,000 miles of canoeing waterways.

### Camp Algonquin

A special camp for disadvantaged boys and girls, 12 to 16 years of age, established at Algonquin Provincial Park in July, 1974, operated for four two-week periods in July and August, 1975. The camp accommodated 180 children. Facilities were installed by the Ministry of Natural Resources and the program was operated by the Camping Division of the Metro-Toronto Y.M.C.A.

## Park Planning Branch

The Branch objective is to develop and co-ordinate long-range, master and environmental plans for the provincial park and public lands recreation system; to provide related planning advice and assistance to other agencies and the private sector; and to provide field design services in landscape architecture and architecture.

### Recreational Land Acquisitions

Work continued on the evaluation of future parkland with emphasis on increased recreational facilities for southern Ontario residents. During the year, 4,764 acres were acquired for parks purposes.

As part of the implementation of the Niagara Escarpment Report, 3,183 acres were purchased, making a total of 40,442 acres acquired to date. An additional 53 acres of land were purchased at Wasaga Beach.

### Park Advisory Committee

Policy recommendations by the Rondeau Provincial Park Advisory Committee were accepted in the main by the Minister in March, 1976.

### Provincial Parks Council

The Ontario Provincial Parks Council, under the chairmanship of Dr. George Priddle, University of Waterloo, was appointed in October, 1974. Comprising 19 members representing a wide array of recreational backgrounds, the Council's mandate includes monitoring the implementation of the Algonquin Park Master Plan and advising the Minister with respect to the planning, management and development of the Provincial Parks system in relation to changing public needs.



In its First Annual Report to the Minister, the Council made recommendations on a wide variety of topics related to Provincial Parks.

### Ontario Trails Council

The Ontario Trails Council, under the Chairmanship of Mr. William E. Coates, was activated in September, 1975. The 17-member citizens' group has been given the mandate to prepare policy recommendations on the implementation of a provincial Trails Program.

The Council is holding public meetings across the Province to hear the concerns of interested snowmobilers, horseback riders, cross-country skiers, trail bike riders, bicyclists, snowshoers and canoeists. The Council will present its final recommendations to the Minister in September, 1977.

### Master Planning

The Provincial Park Master Planning Program continued to expand this year with the scheduled completion and publication of master plans for Short Hills, Frontenac, Point Farms, Charleston Lake, Carillon, Sibley, Quetico, MacGregor Point, Boyne Valley, Peter's Woods, Killbear, Neys and Kakabeka Falls by March, 1977.

Work continued on finalizing plans for Rondeau, Turkey Point, Methodist Point, Lake Scugog, Rock Point, Murphy's Point and several other park projects.

Public discussions were held on several park planning projects to permit active public involvement in the establishment of future policies and developments.

### Provincial Park Policy Statement

A detailed policy statement designed to direct future growth and development of the Provincial Park System is in preparation at this time.

### Park User Survey

The park user survey program, initiated in 1974, continued during the 1975 season with surveys of visitors in 18 parks.

The purpose of the program is to provide information vital to the planning and management of the parks. Designated parks will be surveyed on a cyclical basis, once in five years, each year of the cycle involving a different group of parks.

### Park Classification

Work was initiated on revisions to the park classification system in use since 1967. The proposed revisions introduce certain new class designations and will provide more detailed policies for the planning, development and management of existing and future provincial parks.

### Wilderness Areas

Investigations were undertaken to define the elements of a system of wilderness areas for the Province and to identify candidate areas.

### Nature Reserves

A new planning-measurement system for nature reserves is under development to facilitate the identification of potential nature reserves and the evaluation of existing reserves.

## Conservation Authorities Branch

The Branch supports programs that are initiated and undertaken for the most part by autonomous, corporate bodies established as Conservation Authorities under The Conservation Authorities Act.

The Act enables a Conservation Authority to establish and undertake a wide variety of programs to further the conservation, restoration, development and management of the renewable, natural resources within its watershed.

The Branch objective is to encourage the conservation, development and utilization of water and related land resources by providing funding assistance and policy, planning, management and planning direction to the Authorities.

The 38 Authorities cover most of southern Ontario and areas around the northern centres of Thunder Bay, Sault Ste. Marie, Timmins, Sudbury and North Bay.

A Conservation Authority is formed as a result of a resolution from two or more municipal councils petitioning the Minister of Natural Resources to convene a meeting for that purpose. If the municipal vote is favorable, the Authority is established by Order-in-Council. The boundaries of an Authority are defined by the Minister on a watershed basis.

Authority membership includes representatives of all municipalities situated wholly or partially within the

watershed. The Province may appoint up to three members to each Authority.

As a result of this provincial-municipal arrangement, the initiative and sense of responsibility of the local community are expressed through a watershed organization backed with the technical and financial assistance of the Province.

Conservation Authorities place a particular emphasis on water and related land management but they have also developed important programs oriented to land use, forestry, fish and wildlife, outdoor recreation and conservation education.

Each project undertaken by an Authority must have the approval of the Minister of Natural Resources. Financial assistance is provided through Conservation Authorities Branch for a wide variety of resource management projects.

Provincial grants generally amount to 50 per cent of the cost of an approved project but higher rates are applied for certain types of projects. The Authority raises its share of the project funding through levying its member municipalities or from other sources.

Ten Authorities employ a general manager or director of operations to supervise programs under the direction of the chairman. Twenty Authorities have the services of resource managers supplied by the Province and in four



instances the services of a manager are shared by two Authorities. Technical, clerical and operational staff are hired by the Authority.

Conservation Authorities relate to the Ministry's field organization at the regional level. Four regions have program supervisors to assist the Authorities in planning and implementing their resource management programs.

## Grants to Authorities, 1975-6

### Under the Conservation Authorities Act

Ausable-Bayfield CA	\$ 264,074.00
Cataraqui Region CA	1,270,653.23
Catfish Creek CA	57,305.21
Central Lake Ontario CA	436,881.37
Credit Valley CA	2,100,231.94
Crowe Valley	96,550.61
Essex Region CA	388,586.83
Ganaraska Region CA	248,650.98
Grand River CA	8,201,721.07
Halton Region CA	2,131,840.97
Hamilton Region CA	1,299,343.07
Kettle Creek CA	133,835.44
Lakehead Region CA	250,380.80
Long Point Region CA	350,402.75
Lower Thames Valley CA	636,720.94
Lower Trent Region CA	134,468.72
Maitland Valley CA	232,161.68

Mattagami Valley CA	422,166.74
Metropolitan Toronto and Region CA	4,414,141.28
Mississippi Valley CA	160,958.99
Moirra River CA	1,119,496.69
Napanee Region CA	442,513.01
Niagara Peninsula CA	537,756.14
Nickel District CA	266,411.11
North Bay-Mattawa CA	87,803.38
North Grey Region CA	1,202,453.59
Nottawasaga Valley CA	395,480.77
Otonabee Region CA	247,421.56
Prince Edward Region CA	222,343.99
Raisin Region CA	140,185.91
Rideau Valley CA	618,833.35
Sauble Valley CA	216,284.23
Saugeen Valley CA	469,573.12
Sault Ste. Marie Region CA	545,883.46
South Lake Simcoe CA	314,955.17
South Nation River CA	278,495.36
St. Clair Region CA	491,951.32
Upper Thames River CA	569,999.87
Total	\$31,399,735.75

### Under "Experience '75"

Grants to Authorities	\$ 1,873,287.00
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### Under The Parks Assistance Act

Grants to Municipalities	\$ 496,462.00
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# Division of Lands

## Lands Administration Branch

The Branch is responsible for the administration of Crown lands (both public and mining lands) in Ontario, and for the acquisition of private lands needed for Ministry programs.

### Land Acquisition Section

The Section is responsible for purchasing private lands required for programs such as public recreation and wildlife management. It provides assistance in setting acquisition priorities, oversees and approves each purchase, and maintains a computerized inventory of all property acquired. A management service is provided for newly acquired lands to assure optimum benefits until they are incorporated into Ministry programs. More than 600,000 acres have been purchased since the Section's formation in 1962 - 5,200 acres in the past year. Again this year, emphasis was placed on consolidating holdings to allow development of properties.

### Titles Section

This Section prepares the title documents required to dispose of Crown lands under The Public Lands Act and The Mining Act, and maintains a written registry of Crown Lands. It levies mining acreage tax and carries out procedures necessary to effect forfeiture to the Crown of alienated mining lands when the owners default.

### Mining Lands Section

Under The Mining Act, this Section is authorized to manage Crown mining lands as follows:

- (a) Ruling on mining leases and exploratory licences of occupation (the latter for large tracts of land where normal claim staking is not feasible);
- (b) Issuing permits for sand and gravel removal;
- (c) Setting policy, formulating and interpreting Statutes;
- (d) Auditing mining claims recorded in regional offices;
- (e) Auditing quarry permits issued in regional offices;
- (f) Assessing all geophysical, geological and other technical survey reports; and
- (g) Withdrawing Crown lands from any form of disposition.

This Section also licenses the removal of sand or gravel from beaches, banks or waters of all lakes and streams and regularly monitors such operations. Licences cover private removal as well as large commercial extractions which provide considerable revenue in the form of royalties. Liaison with the Ministry of the Environment and MNR field staff specialists ensures that significant ecological damage is prevented. Municipalities, operating for municipal purposes, are exempt from Ministry licensing and supervision.

The program of rehabilitating depleted pits and quarries on Crown lands continued under regional direction.

### Public Lands Section

This Section is responsible for the management and disposition of public lands. While its role has historically



focused on disposition transactions, the emphasis is gradually shifting to management of the public domain — some 88 per cent of the Province's area.

Since public lands and waters contribute massively to the needs of growing numbers of outdoor recreationists, land management techniques are being evolved and applied to control uses and users so as to minimize damage to land and water resources and prevent monopolistic uses by some at the expense of others. At the same time, every effort is made to preserve the public's traditional freedom — to transiently use and enjoy the public domain.

Land management extends to privately owned lands when such lands are in areas without municipal organization and designated as Restricted Areas under Section 17 of The Public Lands Act. Within a Restricted Area, development or improvement proposals must comply with development plans and guidelines that have been drawn up by the Ministry of Natural Resources following consultation with other Ministries, agencies, area landowners and residents.

Land disposition may be by sale, lease, easement, licence of occupation, land use permit or, when land is transferred to another agency of government, by vesting order. The Section prescribes the terms and conditions of disposition and is responsible for follow-up monitoring to ensure that conditions are being complied with.

Currently, the most common dispositions are Crown cottage lots for private use which, since 1971, have been by lease only. During their first year on the market, lots in subdivisions may be leased only to Canadian citizens and landed immigrants who are residents of Ontario; during the second year, other Canadians and landed immigrants may apply; and during the third year, non-Canadians may apply. Lots not in subdivisions (remote cottage lots) are only available to Ontario residents.

## Land Use Co-Ordination Branch

During 1975 the Branch, comprising the Land Use Planning, Land Use Liaison and Plan Review Sections, continued to co-ordinate Ministry planning, assist other ministries and municipalities with land use plans, and maintain a sensitive-areas recording system. The Branch prepares environmental assessment procedures for Ministry undertakings and co-ordinates Ministry environmental assessment responsibilities.

### Strategic Land Use Plan

Since its inception in 1972 the Branch has concentrated much effort on the preparation of the Strategic Land Use Plan. When completed and approved, this will serve as the official co-ordinating guide for all programs of the Ministry that require land.

Aiming at the same goal of a comprehensive, co-ordinated policy, the Land Use Liaison Section held a series of meetings with other branches of Natural Resources and with other ministries to discuss a variety of land-use policies. Both main office and field staff participated in collecting and analysing data necessary to the formulation of policy.

The outcome of this activity was the creation of reports containing background information and approach to policy for the Northwestern, Northeastern and Southern Planning Areas. The Northwestern report, inviting public response, was released last year. Taking public advice into consideration, the revised draft policy was prepared and will be circulated next year. Northeastern and Southern

information reports were prepared and are being edited for publication in 1977. All public comment will be taken into account in the finalization of the policy, scheduled for 1977.

The general land-use plan for Lake of the Woods was completed and submitted for Ministry approval.

### Assistance to Other Jurisdictions

The Branch worked closely with the Ministry of Transportation and Communications on regional network plans; with the Ministry of Treasury, Economics and Intergovernmental Affairs on its parkway belt and regional development projects; and with Ontario Hydro. It also maintained close co-operation with the Ministries of Environment, Industry and Tourism, and Agriculture and Food.

On other governmental levels, planning assistance was given to such projects as the Central Waterfront Plan under the auspices of Metropolitan Toronto, Design for Development, the Simcoe-Georgian Task Force and the Northumberland Task Force, and to several municipalities preparing official plans, among them the Regional Municipalities of Peel, Durham, Waterloo and Haldimand-Norfolk, the District Municipality of Muskoka, and the City of Timmins.

### Lake Planning

This was the second year of the Ministry's new three-year cottaging initiative. The intent of this program is to expand the number of cottage lots provided on Crown land in northern Ontario. Comprehensive lake plans were prepared by field staff following the guidelines in the Branch's Lake Planning Manual. The Manual was again revised on the basis of the experience gained during the previous field season.

### Plan Review Activity

A great many development proposals that come from individuals, private concerns, other government agencies and municipalities can have a significant effect on Ministry objectives and programs. It is important to ensure that such proposals are compatible with, and create no serious adverse impact on, MNR's objectives or programs. While the review of proposals is common throughout Ontario, development pressures are most vigorous in the southern regions. In reviewing and commenting on development proposals, the Ministry makes a valuable contribution to the maintenance of a good-quality environment and the continuing productivity of provincial resources.

The number of subdivision, severance, other specific development and official plan proposals reviewed in the 1975-6 fiscal year increased by about 50 per cent over the previous year.

During 1975-6 the total effort of the Ministry was reviewed to determine which activities had sufficient impact on the environment to warrant environmental assessment under The Environmental Assessment Act, 1975. Various methodologies were reviewed and a procedure was developed for the preparation of a "class" environmental assessment.

## Surveys and Mapping Branch

The Branch is a service agency whose name accurately describes its duties. It carries out ground and aerial surveys of various types and makes a wide variety of maps for the Ministry, the Government and the public at large. Its director is the Surveyor General of Ontario.



The surveys conducted are of two types; those needed to locate land boundaries or to define ground position for official purposes, and those needed to record the nature of land and assess its future potential.

The Cadastral Surveys Section is responsible for all surveys or re-surveys of township boundaries and all surveys of Crown land prior to its disposition. Much of this work is performed under the direction of the Surveyor General by land surveyors in private practice.

The Control Surveys Section handles the precise fixing of selected ground points needed for mapping control and to support co-ordinate systems associated with surveying, engineering and geographical referencing. A computer program, used in adjusting large networks of survey control, has been completed and is available for use outside the Section. A data bank for the management of control survey information is in the final stages of completion. Control survey agreements were made with the Regional Municipalities of Hamilton-Wentworth and Waterloo for the installation of control surveys.

The Inventory Section uses photo interpretation techniques to furnish data on forest stands throughout Ontario. It sends out field parties to investigate soils and terrain and to evaluate the potential use of land and water for recreation, timber production, wildlife habitat and any hazards to human occupation. The Section, anticipating demands for rapid increases in pulp and paper production, accelerated its forest inventory program and the completion target is now two years ahead of the original schedule. In co-operation with Sport Fisheries Branch, the Section installed and evaluated new water inventory equipment to improve fish productivity within the Province.

The Cartography Section produces and maintains the Province's topographic, territorial and geological map series together with other scientific, recreational or administrative maps for government and public distribution. It also produces a variety of related booklets and brochures. Parallel with this traditional map production activity, a small working laboratory has been staffed to continue an

evaluation of computer-assisted map production in co-operation with the Geographical Referencing Section.

The Drafting Services Section provides general drafting and graphics support to this and other ministries lacking their own drafting staff. In particular, it maintains plans recording in visual form a forest inventory, preliminary geological surveys and the status of mining and other public lands.

The Ontario Centre for Remote Sensing is an intra-governmental service organization which analyses aerial photography and satellite imagery for application to the data needs of resource exploitation and management, and conducts research into new applications of remote sensing. It also provides a source of remote sensing information and expertise for the Province as a whole. The Centre has undertaken more than 100 requested projects since commencing operations in 1974.

The Ontario Geographic Names Board is a ministerial agency furnished with its secretariat by Surveys and Mapping Branch. It provides and maintains accurate, official names of geographic features and unincorporated places for use on federal and provincial maps of Ontario and in related documents.

The past year saw publication of *Principles of Geographical Naming* which sets forth Board guidelines and procedures. "Toponymy and the Technological Imperative" appeared in the December issue of *Canoma*, a Federal Government publication.

This year greater stress was placed on the field name survey as a means of updating map nomenclature. Researchers surveyed Manitoulin Island and areas in Sudbury, Espanola, Wawa, Sault Ste. Marie and Parry Sound Districts. Meetings were held in the last two districts.

The Geographical Referencing Section has designed a basic mapping system for the Province. The maps will provide a foundation for the integrated geographical referencing of positionally-related data in Ontario. Investigations are being conducted into automated mapping and information systems. Several thematic mapping applications, using digital technology, are under development.

# Field Services Division

## Forest Fire Control Branch

At the end of the 1974 fire season in Ontario, a total of 1,625 fires had burned an area which reached a surprising 1,294,800.2 acres. However, the 1975 fire season proved to be the reverse as the total number of fires increased to a high of 3,146 which covered 41,651.5 acres. The number of fires broke a 39-year-old record established in 1936 when 2,264 fires broke out. The 1975 acreage was less than one-thirtieth of the 1974 total. Lightning was responsible for 1,043 fires or 33 per cent of the total. Human error and carelessness caused the balance.

In contrast to the previous year when northwestern Ontario was hardest hit, the Province's Northern and Northeastern Regions were the major hotspots in 1975. In the Northeastern Region, 1,026 fires burned roughly 12,000 acres. Half as many fires consumed a similar acreage in the Northern Region.

Sudbury District in the Northeastern Region had 436 fires. This was the heaviest concentration of forest fires for a single district. In addition, this area had the highest concentration of fires in Canada as reported by Simard on his 1975 Wildfire Occurrence Map of Canada. Many of the fires in the Sudbury area were the result of blueberry picking activities in mid-July. A five-day restricted fire and travel order was enforced at one point on the 20 townships immediately surrounding Sudbury in an effort to alleviate this problem.

In other areas of the province, as in the Algonquin Region, for instance, the number of forest fires was higher because of the reporting of more fires in the municipal protection areas, which previously had usually not been reported to the Ministry.

The 1975 fire season saw what was believed to be the highest provincial daily fire occurrence. On August 15, 89 new fires were recorded raising the total number of active fires in Ontario for that day to 217. In fact, August proved to be the most trying period with 15 days from August 7 to 21 accounting for one-quarter of the fires.



## Fire Prevention

As part of the fire prevention program, many districts visit local elementary schools and give short illustrated lectures to convey the prevention message. This program has brought questionable results and in 1975 the Sudbury District attempted a new approach by inviting children from grades four to eight to participate in a poetry contest. A four-, to six-line poem on fire prevention was written by the pupils, and a panel of judges selected the best 20 from the two best entries from each school. The winning poems were displayed as illustrated posters and copies were posted at schools and suitable outdoor locations. Although success of the program has not been established yet, an initial study showed that children-caused fires in the area were fewer than in 1974.

Two slide-tape programs with a prevention theme were completed in 1975. One, *Ontario Forests*, is for multi-age audience viewing and the other, *This is a Forest Fire*, is aimed at the primary school age group. Both programs, as well as all of the new prevention posters, are being offered in French and English.

## Training

In 1975 which was important to the field of training, a Provincial Education Co-ordinator and two Regional Training Officers were recruited. With a full complement in staff, there are now training officers in each of the five fire regions.

After forced cancellation of the basic courses in fire suppression due to the severity of the fire season of that year, these courses were reintroduced. Two separate courses ran four weeks each. Candidates attending the Fire Course I session in Geraldton received extra benefits by working on weekends to help combat a serious fire situation near the town of Manitouwadge.

The sixth annual advanced fire management course (Fire Suppression II) was held in February, 1975. This course will not be offered again in 1976 as its contents and structure are to be revamped.

The Fire Weather course, which is a prerequisite for Fire Course II and involves a considerable amount of pre-work, has now been expanded from one week to two.

## Development

In 1975 as in the past few years since the equipment assessment and development program was established in 1969, items of forest fire equipment were tested and evaluated. The majority of this assessment work involved fire hose and hose line accessories, and power pumps and accessories.

The development of a photo-mosaic unit in 1973 has realized encouraging results. Due to the continued success of the system in 1975, it is apparent that the use of, and demand for, current photography in day-to-day fire management operations is just beginning to be realized.

The testing of two Monsanto Model 100 portable retardant base mixing systems was continued in 1975. Results from two summers of experience with the Model 100 indicate it provides a beneficial back-up role on prescribed burns and on certain back-fire situations on large fire operations.

# Air Service Branch

During the 1975-6 fiscal year, the Ministry fleet of 43 aircraft operated out of 16 bases, flew a total of 16,973 hours and delivered 10,765 tons of cargo. Fire ranging accounted for 5,204 hours of flying time and fish and wildlife programs for 3,901 hours.

Twenty-six mercy and emergency flights were made to rescue ill and injured persons from isolated locations.

# Engineering Services Branch

Engineering Services Branch supplied support in those aspects of Ministry programs requiring professional engineering, engineering technology and construction expertise.

Projects undertaken included reports, pre-engineering design, construction and maintenance of dams, docks, navigation locks and other hydraulic structures and facilities, as well as improvements to flow channels and dredging.

## Pre-Engineering and Design

Projects included dams at Coopers Pond, Raven Lake, Upper Island Lake, Lutterworth Lake and Ten Mile Marsh. Other projects included docks at Sioux Lookout, Glenora and Nym Lake, a stream enhancement program on Wilmot Creek, and flood and erosion control works on the Napanee River and at Delta Mill.

Studies undertaken by consultants included further work concerning a proposed boat passage facility on Rainy River at Fort Frances and sub-soil investigations for Hullett Marsh Dam, Glenora Dock and the Upper Canada Bird Sanctuary.

## Construction

Water control structures were built at Coopers Pond, Gin Creek, Mud Lake, Upper Island Lake, Westport, and at the Elva Creek outlet of Sturgeon Lake in support of Ministry programs. In addition, a dam was built at the outlet of Bennett Lake for the Mississippi Valley Conservation Authority.

A major extension was built for the Sioux Lookout Air Base Dock; the Abram's Chute Walkway was reconstructed; and new floating docks were built at Nym Lake, Thunder Bay and Geraldton Air Bases.

In North Central Region, multiplate pipe arch culverts were installed at the Whitesand River Crossing, and bridges were built at Robinson and Mercutio Rivers and at Stewart Creek in support of the access road program; the structures were designed in-house.

At Silent Lake Provincial Park, two comfort stations and a sewage lagoon were built in support of the park development program.

At Moosonee, protective groins were built for the Ministry of Treasury, Economics and Intergovernmental Affairs.

## Improvements to Flow Channels

Channel improvements were made as required to improve back-water conditions at Ministry-owned dams and, in addition, erosion control works were built on the Napanee River.

A stream enhancement program was continued on Wilmot Creek to improve the fishery habitat by controlling erosion, providing shelter, and providing better access for fishermen.

## Fleet and Mechanical Equipment

The Ministry fleet increased by 34 vehicles, 22 snowmobiles, three trail bikes, and nine tractors and all-terrain vehicles. This raises the fleet's fixed complement to 1,590 vehicles, 509 snowmobiles, 304 tractors and all-terrain vehicles, and 845 boats and equipment trailers.

The effective size of the operating fleet is increased during the busy summer months by taking delivery of new vehicles in the spring, but holding vehicles to be replaced until fall. The purchases of replacement equipment included 239 vehicles, 41 snowmobiles and 10 tractors.



## Water Resources Engineering

Responsibility for the management of water resources is undertaken through administration of The Lakes and Rivers Improvement Act.

Fifty-three approvals of locations and plans for dam and stream diversion construction were granted under the Act, of which 36 were for dams.

Sixty-six investigations were made of water regulation problems concerning construction or operation of private dams and stream diversions.

## Maintenance

From inspection reports submitted by District offices, maintenance of structures was planned and carried out as required. Major repairs were made to docks at Pembroke, Sault Ste. Marie and Port Sandfield and to retaining walls at Penage Lake; structural repairs were made to the boat rollerway at Longbow Lake Dam; and driftwood was removed upstream from Blind River Dam. Minor maintenance work was carried out at 72 other structures.

## Resource Access

A total of 4,724 miles of forest access, logging access and Ministry Service roads were maintained. In addition, the Ministry shared, by agreement, the cost involved in main-

taining 472 miles of private forest roads constructed by industry. This is an increase of 59 miles over the previous year.

A total of 145 miles of forest access and logging access roads were constructed or reconstructed under the Ministry's resource access program.

The Northern Ontario Resources Transportation Committee funded construction or reconstruction of 35 miles of road under the Committee Direct Program. Under the Indirect Program, where costs are shared with industry partners, numerous projects involving both the forest and mining industries were funded.

The Committee funded winter road construction to facilitate exploration in the Hudson Bay lowlands, and to provide winter access to isolated Indian communities in the northwestern and northern parts of the province.

## Great Lakes Shoreline

Ontario, under an agreement with the Government of Canada, participated jointly in a survey to determine the nature and extent of shore damages and to make preliminary recommendations aimed at more effective shore management. The results of this survey, a Technical Report and accompanying Coastal Zone Atlas, will be released in the next fiscal year.

# Finance and Administration Division

## Administrative Services Branch

The Branch is a support group offering the administrative services that lie outside the personnel and financial fields.

## Services Section

### Office Management

This Unit is responsible for the design, standardization, issuance and replacement of uniforms. The existing 23 uniform types are being reduced in number and redesigned. The new uniforms will be phased in over the next two years. Other responsibilities include the following;

- The continual updating of the Ministry's listing in telephone directories across the Province;

- Preparation of information for the government telephone directory.

- The issuance of 1,500 telephone credit cards;

- The issuance of identification cards (five types) and emergency pass cards to Ministry staff;

- All Branch personnel and accounting functions;

- The distribution of all government manuals and their revisions, as well as the Ministry's policy and procedure directives and key personnel directory;

- The equipment inventory control system and main office equipment inventory control records; and

- The management of over 205,000 active Crown land files and the several incoming documents that necessitate the recording of over 80 entries daily on the cross-reference index system, and the retrieval of over 200 files daily.

### Public Service Centre

Consolidation of the former Mines Publications office, the Aerial Photo Library and the Map Office has enabled the Ministry to provide more efficient and effective service to the public and government agencies.

The Centre is responsible for the sale and distribution of Ministry publications including geological maps, reports, circulars, technical mining publications, geographical maps, forest resources inventory maps, lake contour maps and the Provincial Topographic map series as well as aerial photographs in contact or enlarged format. The National Topographic map series and publications of the Ministry of Transportation and Communications are also available.

The Centre sold or distributed over 300,000 maps and aerial photographs during the year; served 26,000 cash customers, and answered 20,000 items of correspondence and thousands of telephone enquiries.

Hunting and fishing licences will be sold at the Centre in the 1977-8 fiscal year.

### Data Processing Unit

This Unit accepts for keying the source documents for the Ministry's production data processing systems; schedules, submits and received computer runs and sees that the desired reports are distributed to user branches; maintains Ministry magnetic tape library; administers the Ministry's magnetic tapes retained in the library of the Central Computing Branch; maintains sufficient systems documentation to enable a contract programmer to carry out maintenance or minor revisions when requested by user branches; assists user branches in identifying computer problems and suggesting means of rectifying such problems; and keys data from source documents onto magnetic tape or tab cards in a predetermined format. The cards and/or tapes are interpreted by the Ministry's computer programs to produce the desired reports. Approximately two million records are keyed annually.

## Supply Section

### Purchasing

This Unit is responsible for the co-ordination of this Ministry procurement program. A wide variety of goods and services are purchased to equip the different areas of



the Ministry — lab equipment, furniture and furnishings, clothing, chemicals, etc. Where feasible, bulk purchase and standing agreements are negotiated for wide use.

Last year over 11,000 purchase orders were issued from this Unit. Approximately 18,500 requisitions were processed; resulting in the generation of purchase orders and Central Stationery, Telephone Services, Central Duplicating, Central Pharmacy, Central Mailing, Government Services and Print Procurement Requisitions.

### Central Supply

Central Supply Warehouse received a total of 608 tons of supplies and equipment during the year. Shipments of more than 243 tons were made by express, freight and transport in addition to mail and internal supply to main office.

A total of 2,078,547 Fish and Wildlife licences and 714,451 Park permits were distributed to field offices and 4,000 private agents who sell licences to the public. The distribution included about 50 types of licences and permits on 14,596 invoices.

Ministry uniforms were supplied from stock.

The stockroom in Whitney Block distributed supplies from the warehouse and Government Stationery Service.

The Whiteprint Copy Centre prints maps for distribution to the public. Copies totalled more than 40,000 in the year.

## Records and Forms Management Section

This Section is the operating arm of the Ministry Records Management Committee. The Committee ensures that the Ministry complies with The Manual of Administration Directive and The Archive Act and that the goals and objectives of the Ministry agree with those of the government as a whole. The Section is divided into two units: Records Management and Forms Management.

### Records Management Unit

The Unit is responsible for maintaining an accurate inventory of all records, records equipment and microrecording equipment; control over the initiation, maintenance, protection, retention and disposition of all Ministry records; conducting feasibility studies regarding all micro-record systems and submitting all proposals to the Ministry Records Management Committee; conducting training seminars for the Ministry in all aspects of records management; and developing Ministry file classification plans.

### Forms Management Unit

The Unit is responsible for establishing, maintaining and reviewing an inventory of Ministry forms; reviewing and approving all requests for forms printing, improvement in design of necessary forms by adherence to Ministry and Government-wide design standards; providing forms analysis and design service to users to ensure that Ministry forms will accomplish necessary operations in the most efficient and economical manner to achieve the desired results; conducting in-depth analysis of all Ministry forms to simplify the flow of each form in use in a system, and to simplify the preparation and handling of the form by removing all superfluous and redundant data with emphasis on consolidation, standardization and elimination; providing technical guidance to form originators; and conducting training seminars in forms management and design for Ministry personnel.

## Accommodation Section

The Accommodation Office co-ordinates the provision of accommodation for the Ministry and is the official liaison

with the Ministry of Government Services for accommodation matters.

The Ministry Accommodation Plan, which is submitted to Management Board to obtain funds via the Ministry of Government Services for capital, leasing and tenant alteration projects, is prepared yearly.

The Accommodation Office supervises the development and implementation of approved projects, endeavours to facilitate communication with field offices, and ensures that the immediate, medium and long-range accommodation objectives of the Ministry are clear.

## Information Branch

Information services were expanded during the past fiscal year with the establishment of a new Audio-Visual and Films Section under professional supervision.

In its first year, the Section completed eight new slide-tape programs, including a series on hunter safety, that received province-wide distribution. It also completed *Snowshoe Hunting*, a motion picture produced entirely by staff.

Section photographers completed more than 200 assignments for Ministry offices and produced 5,500 photo prints.

The photo library supplied Ministry offices with 1,400 photo prints and 2,400 color slides.

The film library loaned 1,977 films to Ministry offices and educational groups. Sixteen films were added to the library, bringing the number of titles to 309.

### Exhibits

The Branch continued with the development of a revamped Ministry style in exhibits and prepared and managed exhibits at six major fairs and exhibitions during the year. Exhibits were prepared for 28 smaller fairs and shows and a number of these were managed by field offices.

### Information Services

Information and Liaison Section worked closely with field offices during the year to co-ordinate field information services with main office output.

Urgent news was delivered directly to major news outlets. Background and topical information was distributed in a newsletter mailed weekly to 3,100 news outlets and special-interest groups while the French translation went to 180 outlets. Additional material was supplied on request to editors and broadcasters.

*Outdoors Ontario*, a radio series, was delivered regularly to 55 Ontario stations as a public service. It was supplemented by *Touch Wood*, a radio series of brief items on conservation officers in the field.

Illustrated lectures were given to schools, youth groups, service clubs and outdoor organizations.

Material was mailed to 43,600 persons who requested information on natural resources or outdoor recreation.

During the year, the Ministry published 40 booklets, eight folders and 17 leaflets or small folders. These totals included a few annual publications and revised versions of earlier printings. In addition, many scientific papers, technical reports and leaflets on Provincial Parks and other installations and services were published. New Ministry publications, released during the year, included the following:

Amethyst  
Bancroft Area Minerals  
Better Streams for More Trout (50¢)  
Common Pests of Ornamental Trees and Shrubs  
Essex Region Conservation Report  
Fire Prevention (set of five leaflets)  
Mammal and Bird Names in the Indian Languages of Ontario



Ontario Angling (statistical report) (\$2.50)  
Peterborough Petroglyphs  
Sugar Bush Management for Maple Syrup Producers  
Toronto's Geological Past  
Trapping Guide  
Vegetation for the Rehabilitation of Pits and Quarries  
Vehicle and Equipment Visual Identity Manual.

Safety Programme Development Section

During the past fiscal year, safety staff carried on the Ministry driver training and testing program, first aid instruction, safety audits of Ministry buildings and facilities, investigations of accidents and injuries, defensive driving courses, boating courses, power tool inspections, and safety workshops on axes, chainsaws and snowmobiles.

The following numbers of staff were trained as noted during the year:

Driver training/testing .....	2,222
Defensive driving .....	844

First Aid .....	2,065
Other safety courses .....	2,030
Safety workshops .....	345
Safety inspections .....	943
Safety investigations .....	231
Off-the-job training, to public .....	537

Under the hunter safety training program, 25,900 new hunters were trained by 1,005 instructors certified by the Ministry, bringing the total number of trained and qualified hunters in Ontario to 287,173.

The annual report of the Workmen's Compensation Board showed a total visible cost of \$568,131.02, an increase of \$144,828.45 on the year, and 1,058 compensable claims, an increase of 59 on the year.

The lowest injury frequency rate in the Ministry was 9.0, achieved by Northeastern Region, improving by 3.8 on their low mark in the previous year.

Financial Management Branch

This Branch provides accounting and financial administrative support services for the Ministry. It maintains main office records of revenue and expenditure, prepares financial statements, and supervises and co-ordinates the accounting functions of the divisional and field offices. Its responsibilities include budget preparation and control, development of accounting and costing systems, financial

and cost analyses, pre-audit controls and procedures, and financial liaison with Management Board of Cabinet, the Provincial Auditor, and other ministries and agencies. The internal audit section provides a continuing review and assessment of accounting, financial and operational controls.

Financial Report

Statement of Revenue For year ended March 31, 1976

Statement No. 1

MINISTRY ADMINISTRATION			
Recovery of Prior Year's Expenditures.....	\$	24,928	
Sale of Maps, Publications, etc. ....		420,883	
Rentals-Ministry Houses .....		394,240	\$ 840,051
LAND MANAGEMENT			
Recovery of Prior Year's Expenditures			
Land Acquisition .....	\$	39,163	
Conservation Authorities .....		29,312	
Remote Sensing .....		13,135	
Miscellaneous .....		18,798	\$ 100,408
Taxation-Mines Acreage Tax.....		643,262	
Royalties-Forest Protection Charges.....		2,416,564	
Fees and Licences-Mines.....		534,943	
Public Domain.....			
Leasing and Licensing of Lands .....	\$	943,997	
Gas and Mining Leases .....		750,291	1,694,288
Sales			
Recovery Fire Fighting Costs .....		295,449	
Land and Buildings .....		260,590	
Equipment .....		142,306	
Air Service Flying Fees .....		237	
Sundry Sales.....		8,389	706,971
Reimbursements of Expenditures-Government of Canada			
ARDA - Conservation Authorities .....	\$	500,000	
Moosonee Hydro Lines .....		123,700	
Dams, Reservoirs and Channel Improvements .....		59,784	683,484
OUTDOOR RECREATION			
Recovery of Prior Year's Expenditures			
Federal Sales Tax - Old Fort William			
Historical Park .....	\$	56,114	
Nanticoke Agreement .....		19,778	\$ 75,892



Recreation Areas			
Park Entrance and Camping Fees .....	\$ 4,740,378		
Park Concessions .....	206,171		
Park Miscellaneous .....	2,109	4,948,658	
Fish and Wildlife			
Hunting and Fishing Licences .....	\$11,024,625		
Royalties .....	284,203		
Confiscated Articles .....	32,742		
Miscellaneous-Fish and Wildlife .....	98,969	11,440,539	
St. Lawrence Parks			
Fees .....	\$ 1,521,711		
Sales .....	1,099,485		
Facilities .....	93,473		
Miscellaneous .....	10,411	2,725,080	
Frost Centre			
Facilities .....		244,010	
Reimbursements of Expenditures – Government of Canada			
Rideau and Trent Canal Waterways and Adjacent Land Use Management .....		44,359	19,478,538
RESOURCE DEVELOPMENT			
Renewable Resource Development Recovery of Prior Year's Expenditures			
Construction and Rehabilitation of Dams .....	\$ 86,225		
Algonquin Forestry Authority .....	67,501		
Rural Development Projects .....	52,237		
Miscellaneous .....	880	\$ 206,843	
Forest Management			
Stumpage .....	\$23,518,056		
Stock Production .....	182,157		
Forest Management .....	180,534		
Forest Products .....	123,309		
Miscellaneous Timber .....	55,207	24,059,263	
Water Management			
Royalties – Water Power .....		12,747,346	
Reimbursement of Expenditures – Government of Canada			
Forest Management			
ARDA – Private Land Forestry .....	\$ 250,000		
ARDA – Grants to Municipalities and Conservation Authorities .....	47,530		
ARDA – Forest Stand Improvement .....	16,583		
Commercial Fish and Fur Resource Development Agreement .....	75,360	389,473	
Reimbursements of Expenditures – Other			
Forest Management			
Logging Roads – Construction Costs .....		317,610	37,720,535
NON-RENEWABLE RESOURCE DEVELOPMENT			
Mineral Management			
Recovery of Prior Year's Expenditures			
Mine Rescue Stations – Recovery of Operational Costs .....		\$ 179,600	
Mining Tax .....		62,438,191	
Royalties .....		836,305	
Fees, Licences .....		119,866	
Miscellaneous .....		1,400	63,575,362
MISCELLANEOUS			
Recovery of Prior Year's Expenditures .....			10,115
Total Revenue .....			\$128,404,521



# Total Expenditures Allocated to Main Services

For year ended March 31, 1976

Statement No. 2

PROGRAMS	Activity Total	Sub-Activity Total	Land Management	Environ- mental Protection	Parks	Wildlife	Forest Management	Mineral Management	Conservation Authorities	Northern Affairs
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
MINISTRY ADMINISTRATION (Pro-rated by Operating Activities)										
Main Office.....	2,609,609	2,609,609	224,948	411,013	617,695	395,617	716,077	205,898	38,361	
Field Office.....	9,909,096	9,909,096	854,164	1,560,682	2,345,483	1,502,219	2,719,056	781,828	145,664	
Financial Management.....	2,405,550	2,405,550	207,358	378,874	569,394	364,681	660,083	189,798	35,362	
Administrative Services.....	2,010,864	2,010,864	173,336	316,711	475,972	304,847	551,781	158,657	29,560	
Information Services.....	2,164,654	2,164,654	186,593	340,933	512,374	328,162	593,981	170,791	31,820	
Personnel.....	617,404	617,404	53,220	97,241	146,140	93,598	169,416	48,713	9,076	
Junior Rangers.....	2,702,920	2,702,920	184,339	442,468	1,203,070	183,258	675,460	14,325		
Northern Affairs.....	1,111,779	1,111,779								1,111,779
Youth Corps (S.W.O.R.D.) .....	3,489,122	3,489,122	185,659	161,099	526,600	390,547	308,301	41,204	1,875,712	
	27,020,998	27,020,998	2,069,617	3,709,021	6,396,728	3,562,929	6,394,155	1,611,214	2,165,555	1,111,779
LAND MANAGEMENT										
Water Control and Engineering .....	7,500,407									
Water Protection .....		3,106,595	1,310,983	795,288	52,812	900,913	46,599			
Equipment and Plant Operation.....		3,158,325	1,332,813	808,531	53,692	915,914	47,375			
Recreation Oriented Water Facilities.....		698,311	294,687	178,768	11,871	202,510	10,475			
Flood & Erosion Control Facilities .....		233,123	98,378	59,679	3,963	67,606	3,497			
Ministry Service Facilities .....		304,053	128,310	77,838	5,169	88,175	4,561			
Forest Protection.....	12,911,303									
Protection Services.....		3,081,023	27,729	2,809,893	76,101	48,680	88,425	25,573	4,622	
Communications .....		1,006,793	88,497	142,159	242,839	155,650	281,600	81,047	15,001	
Fire Control .....		8,823,487		8,823,487						
Air Service .....	3,065,695	3,065,695	222,263	1,278,701	217,358	958,643	332,934	42,307	13,489	
Extra Fire Fighting.....	7,594,177	7,594,177		7,594,177						
Resource Access .....	10,014,344									
Forest & Logging Access Roads.....		4,100,743	108,140	247,223	157,835	365,677	3,195,614	26,254		
Crown Land Subdivision and										
Ministry Service Roads.....		292,994	89,451	41,517	21,857	40,668	95,897	3,604		
Recreation Access, Public Transport										
and Agreement Roads.....		1,092,028	69,344	94,024	265,690	327,608	310,573	16,053	8,736	
Northern Ontario Resources										
Transportation Roads .....		4,528,579	1,363,102				2,830,362	335,115		
Land & Water Classification.....	6,691,864									
Lands Service.....		1,130,030	501,168			7,119	220,469	361,497	39,777	
Surveys and Mapping .....		3,220,746	777,814				467,945	1,779,219	195,768	
Inventory.....		1,081,215	429,007			35,248	616,960			
Land Use Co-ordination .....		1,259,873	1,259,873							
Land, Water and Mineral Title										



PROGRAMS	Activity Total	Sub-Activity Total	Land Management	Environ- mental Protection	Parks	Wildlife	Forest Management	Mineral Management	Conservation Authorities	Northern Affairs
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Administration.....	6,000,648									
Land Water and Mineral Title Service.....		1,592,253	841,171		473,303	36,222		241,557		
Public and Mining Lands.....		4,408,395	3,618,475					789,920		
Conservation Authorities.....	33,262,126								1,857,576	
Conservation Service.....		1,857,576							31,404,550	
Grants.....		31,404,550								
Land Acquisition.....	3,878,498	3,878,498	41,730		3,562,816	272,648	1,304			
	90,919,062	90,919,062	12,602,935	22,951,285	5,145,306	4,423,281	8,554,590	3,702,146	33,539,519	
OUTDOOR RECREATION										
Recreational Areas.....	26,559,133									
Parks Services.....		6,114,840			6,114,840					
Crown Land Recreation Management.....		1,261,759			1,261,759					
Park Management.....		12,544,713			12,544,713					
Park Planning Project.....		1,222,450			1,222,450					
Park Development Projects.....		5,415,371			5,415,371					
Fish and Wildlife.....	15,604,460									
Fish and Wildlife Service.....		4,955,582				4,955,582				
Wildlife.....		4,198,844				4,198,844				
Fisheries.....		6,450,034				6,450,034				
St. Lawrence Parks Commission.....	6,334,904	6,334,904			6,334,904					
	48,498,497	48,498,497			32,894,037	15,604,460				
RESOURCE PRODUCTS										
Mineral Management.....	7,796,086							2,724,899		
Mines Service.....		2,724,899								
Mineral Police Development and Taxation.....		790,058						790,058		
Industry Support and Safety Service.....		1,895,597						1,895,597		
Geological Survey, Inventory and Analysis.....		2,312,126						2,312,126		
Mine Rescue.....		73,406						73,406		
Forest Management.....	30,952,337									
Forest Service.....		9,070,573						9,070,573		
Silviculture Operations.....		10,598,381						10,598,381		
Silviculture Support.....		5,283,752						5,283,752		
Timber Management.....		5,999,631						5,999,631		
Commercial Fish and Fur.....	2,333,363	2,333,363				2,333,363				
Managed Forest Tax Reduction Grants.....	461,074	461,074						461,074		
	41,542,860	41,542,860				2,333,363	31,413,411	7,796,086		
TOTAL EXPENDITURE.....	207,981,417	207,981,417	14,672,552	26,660,306	44,436,071	25,924,033	46,362,156	13,109,446	35,705,074	1,111,779
Percentage of Total.....		100%	7.06%	12.82%	21.37%	12.46%	22.29%	6.30%	17.17%	.53%



# Personnel Branch

## Total Staff

March 31, 1976	Regular	Probationary	Unclassified	Total
Main Office .....	1,207	51	195	1,453
Field Offices.....	2,586	205	2,114	4,905
Total .....	3,793	256	2,309	6,358
Total Complement of Positions .....				4,096
Vacancies in Complement .....				47
Regular and Probationary Staff .....				4,049
New Employees Hired 1975-6 .....				256

## Professional Staff                      \*Staff Turnover

March 31, 1976	March 31, 1976
Biologists .....	111
Engineers.....	35
Foresters .....	259
Geologists .....	56
Mining Engineers.....	31
Park Planners .....	26
Scientists .....	59
Miscellaneous .....	52
Total .....	629
Resource Technicians.....	1,521
Licensed Scalers .....	872
Deceased.....	15
Transferred.....	58
Resigned.....	134
Dismissed.....	0
Superannuated.....	74
Total .....	281
*Ratio of separations to total of regular and probationary staff at March 31, 1975, was 14.1%.	

## Administration Staff, March 31, 1976

### DEPUTY MINISTER

Dr. J. K. Reynolds

### ASSISTANT DEPUTY MINISTERS

L. Ringham, *Northern Ontario*  
W. T. Foster, *Southern Ontario*  
A. J. Herridge, *Resources and Recreation*  
J. W. Giles, *Lands and Waters*

### EXECUTIVE DIRECTORS

J. W. Lockwood, *Division of Forests*  
G. A. Jewett, *Division of Mines*

### DISTRICT MANAGERS

W. D. Adlam, *Ottawa District*  
R. P. Alton, *Wawa District*  
E. N. Arbuckle, *Espanola District*  
J. R. Bailey, *Moosonee District*  
R. G. Bailey, *Napanee District*  
M. P. Barker, *Atikokan District*  
L. L. Bronson, *Pembroke District*  
W. H. Cantelon, *Tweed District*  
W. R. Catton, *Cambridge District*  
J. K. Cleaveley, *Geraldton District*  
D. J. D'Agostini, *Fort Frances District*  
P. R. Davidson, *Aylmer District*  
J. E. Dickenson, *Niagara District*  
C. Dionne, *Gogama District*  
T. E. Dodds, *Ignace District*  
I. B. Earl, *Maple District*  
C. E. Emblin, *Hearst District*

H. P. Endress, *Dryden District*  
E. W. Everley, *Red Lake District*  
D. R. Fortner, *Chatham District*  
O. Goodman, *Bancroft District*  
C. R. Gray, *Lindsay District*  
L. J. Haas, *Terrace Bay District*  
D. L. Hagar, *Blind River District*  
J. E. Hamilton, *Thunder Bay District*  
G. O. Koistinen, *Nipigon District*  
R. G. Lightheart, *Kapuskasing District*  
W. J. Lovering, *Owen Sound District*  
W. D. Mansell, *Wingham District*  
R. B. McGee, *Simcoe District*  
D. B. McGregor, *Kenora District*  
D. E. McHale, *Sudbury District*  
J. G. Minor, *Kirkland Lake District*

J. R. Morin, *Cornwall District*  
D. O'Grady, *White River District*  
A. F. Papineau, *Timmins District*  
W. R. Peck, *Parry Sound District*  
C. E. Perrie, *Sioux Lookout District*  
E. Rogers, *North Bay District*  
J. E. Rumney, *Temagami District*  
W. D. Schafer, *Huron District*  
J. H. Sellers, *Sault Ste. Marie District*  
J. A. Simpson, *Algonquin Park District*  
J. M. Small, *Chapleau District*  
R. W. Tippet, *Bracebridge District*  
R. H. Trotter, *Brockville District*  
W. Vonk, *Lanark District*  
D. D. White, *Minden District*  
G. A. Wright, *Cochrane District*

K. K. Irizawa, *Division of Fish and Wildlife*  
J. W. Keenan, *Division of Parks*  
L. H. Eckel, *Division of Lands*  
W. G. Cleaveley, *Field Services Division*  
G. D. Spry, *Finance & Administration Division*

### REGIONAL DIRECTORS

J. R. Oatway, *Northwestern (Kenora)*  
R. A. Baxter, *North Central (Thunder Bay)*  
G. A. McCormack, *Northern (Cochrane)*  
J. M. Hughes, *Northeastern (S. S. Marie)*  
J. S. Ball, *Algonquin (Huntsville)*  
T. W. Hueston, *Eastern (Kemptonville)*  
A. H. Peacock, *Central (Richmond Hill)*  
W. H. Charlton, *Southwestern (London)*

### DIRECTORS

R. M. Dixon, *Forest Management Branch*  
D. P. Drysdale, *Timber Sales Branch*  
D. H. Burton, *Forest Research Branch*  
Dr. E. G. Pye, *Geological Branch*  
Dr. T. P. Mohide, *Mineral Resources Branch*  
D. A. Moddle, *Mineral Research Branch*  
P. B. McCrodan, *Mines Engineering Branch*  
D. R. Johnston, *Wildlife Branch*  
K. H. Loftus, *Sport Fisheries Branch*  
M. J. Brubacher, *Commercial Fish & Fur Branch*  
J. D. Roseborough, *Fish & Wildlife Research Branch*  
R. H. Hambly, *Park Management Branch*  
R. J. Vrancart, *Park Planning Branch*  
J. McGinn, *Lands Administration Branch*  
R. J. Bugar, *Land Use Co-ordination Branch*  
R. G. Code, *Surveys and Mapping Branch*  
W. L. Sleeman, *Forest Fire Control Branch*  
T. C. Cooke, *Air Service Branch (S. S. Marie)*  
S. B. Panting, *Engineering Services Branch*  
A. D. Latomell, *Conservation Authorities Branch*  
A. C. Goddard, *Financial Management Branch*  
R. V. Scott, *Northern Affairs Branch*  
H. B. Farrant, *Personnel Branch*  
J. A. Queen, *Administrative Services Branch*  
F. Moritsugu, *Information Branch*  
Miss M. Mogford, *Policy Co-Ordination Secretariat*  
G. A. Hamilton, *The Leslie M. Frost Natural Resources Centre*



# Northern Affairs Branch

Northern Affairs is a supporting service for all government agencies having transactions in northern Ontario. It assists citizens with problems related to all levels of government.

The Branch operates from a small co-ordinating office in Toronto and 144 locations in the north — three regional offices, 24 “storefront” offices, 35 satellite offices and 82 contact points.

Northern Affairs offices provide information and serve as government bookstores. They carry pamphlets and forms for many programs and distribute about 10,000 publications a month.

Northern Affairs officers provide services and facilities and perform specific functions for other agencies. They hold letters of authority under several Acts administered by other ministries, and in many cases they operate across ministerial lines.

The number of transactions handled by the Branch has increased as follows across the past five years:

1971	48,492
1972	80,958
1973	132,975
1974	164,851
1975	257,248

# Legal Services Branch

During the fiscal year ending with March 31, 1976, amendments were effected to two statutes administered by this Ministry, and one new statute was enacted. Amendments were made to The Public Lands Act (by Statutes of Ontario, 1975, Chapter 65), and to The Forestry Act (by Statutes of Ontario, 1975, Chapter 20).

The Mineral Emblem Act, 1975, was enacted (by Statutes of Ontario, 1975, Chapter 59).

Forty-eight regulations, made under the authority of Acts administered by the Ministry, and 457 Orders in Council were prepared and processed through the Branch during the fiscal year.

Two federal-provincial agreements were processed through the Branch during the fiscal year. One related to the performance of co-operative water quantity surveys in the Province. The second agreement concerned a joint assistance program to Indians in Ontario, continuing for five years.

# Program Analysis Office

Program Analysis is responsible for co-ordinating the program planning and program accountability aspects of the Ministry’s management system and serves as the Ministry’s main contact with the Management Board Secretariat. Its accomplishments during the past fiscal year are summarized below.

Guidelines, support and conciliation of reports were provided for the assigning of output targets and associated dollars in the spring of 1975, the mid-year progress review in the fall, and the year-end review in early spring, 1976.

Managing by Results commitments with Management Board were introduced for 16 per cent of the Ministry’s budget, covering six program areas. The objective is to have 100 per cent of the Ministry’s budget on MBR by 1978-9.

Program Analysis co-ordinated the internal review and liaison with the Management Board Secretariat and subsequent monitoring of Management Board decisions on 240 Ministry submissions to the Board during the year.

Several projects of a program-analysis nature were undertaken during the year. Examples included a workload analysis of the Official Plan Review function, the development of a land acquisition priority-setting scheme, and a review of the cottage lot program.

Program Analysis co-ordinated the preparation of the Ministry’s Estimates Submission.

Additional responsibilities included representation on committees reviewing a number of Ministry operations.

# Policy Co-Ordination Secretariat

The Secretariat assists the Deputy Minister and his staff in co-ordinating policy planning by the following:

Providing co-ordination, integration and communication services with regard to policy planning to the various Divisions and Regions to assist them in achieving the Ministry’s objectives;

Supporting the production of new policy initiatives in conjunction with the relevant Divisional and Regional staff;

Providing support, advice and information to the Divisions and Regions in assessing long-range policy needs and directions in the context of the Ministry’s mandate and government objectives;

Ensuring the widest and earliest possible multi-functional consideration of policy proposals being developed within the Ministry;

Ensuring consideration of the interministerial and intergovernmental implications of policy proposals being developed within the Ministry;

Ensuring the necessary liaison with Cabinet and its Committees, and with other Ministries; and

Undertaking special policy co-ordination assignments at the request of the Deputy Minister or other members of his staff.



# The Mining and Lands Commissioner

The Mining and Lands Commissioner exercises judicial, quasi-judicial and administrative powers and duties under The Beach Protection Act, The Mining Act and The Mining Tax Act, 1972, and regulations made under The Ministry of Natural Resources Act, 1972, assigning powers and duties of the Minister to the Commissioner.

Orders and judgements issued by the tribunal during the past fiscal year were as follows:

877 orders extending time for performing work or applying and paying for leases;

33 orders authorizing special renewal of licences;

93 miscellaneous orders and judgements.

The total number of orders was 1,003.

Extension orders were filed on 8,140 claims prior to default and on 860 claims for relief from forfeiture.

Hearings were held under The Mining Act at Sudbury, Thunder Bay, Timmins and Toronto.

Sixteen appeals were heard under The Conservation Authorities Act at London, Kitchener, Waterloo and Toronto. Five of the appeals were withdrawn, settled or abandoned.















